Evaluation of Fleet Readiness Production Options

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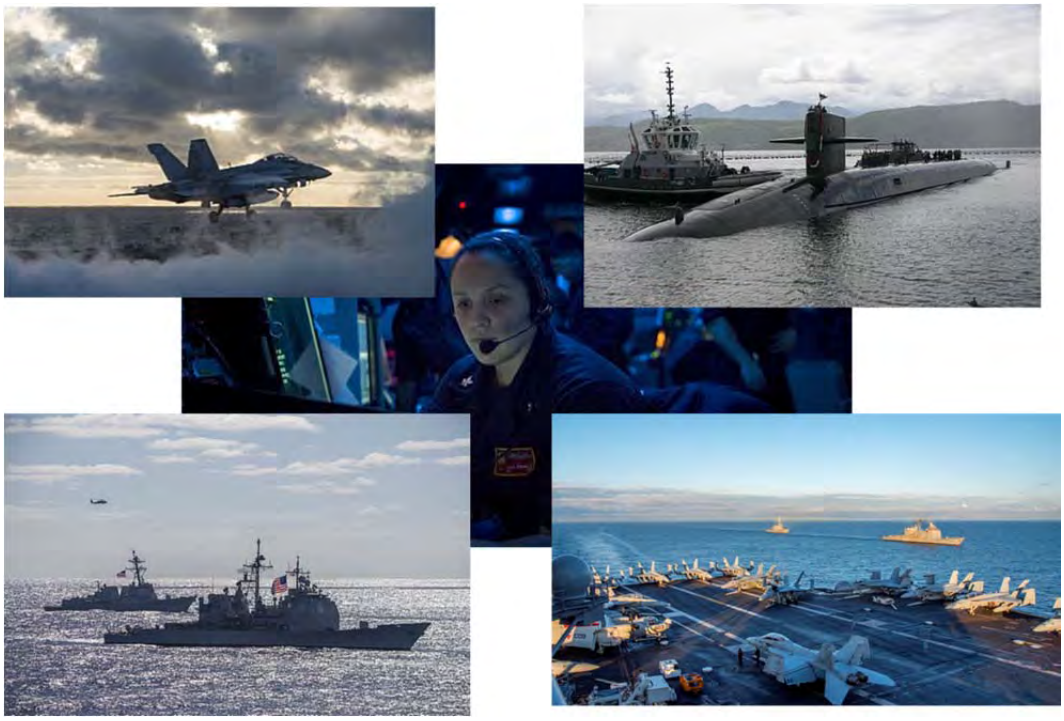

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Photography Credit: Top Left: Atlantic Ocean (Aug. 9, 2017) An F/A-18F Super Hornet attached to the "Blacklions" of Strike Fighter Squadron (VFA) 213 launches from the aircraft carrier USS George H.W. Bush (CVN 77) for an air power demonstration rehearsal. (U.S. Navy photo by MC 3rd Class Matt Matlage/Released)

Top Right: Bangor, WA (Jun. 9, 2017) The Ohio-class ballistic-missile submarine USS Nebraska (SSBN 739) returns to Naval Base Kitsap-Bangor following sea trials. (U.S. Navy photo by LCDR Michael Smith/Released)

Center: U.S. 5TH Fleet Area of Operations (May 27, 2017) Operations Specialist 2nd Class Olivia Donnelly coordinates the exchange of data between ships in the combat information center aboard the guided-missile cruiser USS Hue City (CG 66). (U.S. Navy photo by MC 3rd Class Joshua M. Tolbert/Released)

Bottom Left: Coral Sea (Jul. 22, 2017) The Ticonderoga-class guided missile destroyer USS Shiloh (CG 67) and the Arleigh-Burke class guided missile destroyer USS Sterett (DDG 104) sail in formation as part of a Combined Amphibious Force during Talisman Saber 17. (U.S. Navy photo by MC 2nd Class Sarah Villegas/Released)

Bottom Right: Atlantic Ocean (Aug. 8, 2017) The Arleigh Burke-class guided-missile destroyer USS Donald Cook (DDG 75) and Ticonderoga-class guided-missile cruiser USS Philippine Sea (CG 58) transit alongside the Nimitz-class aircraft carrier USS George H.W. Bush (CVN 77) during exercise Saxon Warrior 2017. (U.S. Navy photo by MC 3rd Class Daniel Gaither/Released)

Approved by: **September 2017**

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Abstract

This study compares current Navy organization and processes for U.S. Fleet Forces Command (FFC) and U.S. Pacific Fleet (PACFLT) readiness funding and an alternative Single Readiness Integrator Framework in terms of achieving overall readiness and responsiveness for the two commands. In the alternative evaluated, all Fleet Flying Hour, Training Flying Hour, ship operations, and ship depot maintenance funding would be consolidated under a single Budget Submitting Office (BSO), and all of the Navy Type Commands (TYCOMs) would be realigned under a single Fleet commander. We evaluate the potential effects of the alternative on readiness and responsiveness, and conclude that, based on a lack of a common definition for *readiness* and the large number of external factors, it is not possible to quantitatively assess the proposed consolidation's effects. Our qualitative analysis of metrics on readiness, responsiveness, and efficiency indicates that we cannot confidently predict whether consolidation will have a positive or negative effect on readiness while maintaining the current level of responsiveness. We also identify potential unintended consequences that should be considered. We offer recommendations for actions that could provide improved visibility and management of readiness funds without having to modify the current organizational structure.

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Executive Summary

CNA was asked by the Deputy Chief of Naval Operations for Integration of Capabilities and Resources (OPNAV N8) to evaluate, in terms of readiness and responsiveness, the potential benefits, challenges, and risks associated with consolidating Fleet readiness account funding for the two Navy Fleet Command Budget Submitting Offices (BSOs)—U.S. Fleet Forces Command's (FFC) BSO 60 and U.S. Pacific Fleet's (PACFLT) BSO 70—under a single BSO. OPNAV N8 also requested that if the evaluation indicated, to design a pilot initiative that would test and validate the study's suggested outcomes. The study supports Chief of Naval Operations' (CNO) Blue Line of Effort (LOE), Task 5: "Examine the organization of United States Fleet Forces Command, Commander, Pacific Fleet, and their subordinate commands to better support clearly defining operational and warfighting demands and then to generate ready forces to meet those demands."

The five readiness accounts identified for potential consolidation are all Operations and Maintenance, Navy (OMN) sub-activity groups (SAGs): Mission and Flight Operations (1A1A); Fleet Air Training (1A2A); Aircraft Depot Maintenance (1A5A); Mission and Other Ship Operations (1B1B); and Ship Maintenance (1B4B).

The report provides a brief overview of factors related to the potential consolidation, documents the current and proposed Fleet readiness organizational structures and funding relationships, and summarizes expert opinions from eight current and former Fleet commanders. We use this information and inputs from discussions with the OPNAV and Fleet staffs to provide a qualitative assessment of consolidation's potential effects in terms of readiness and responsiveness, and provide recommendations. This approach highlights the potential benefits, challenges, and risks to Navy readiness of moving toward a single BSO for readiness funds, while identifying potential unintended consequences.

Background

When U.S. Fleet Forces Command was established in 2006 through the consolidation of the previous Fleet Forces Command and the U.S. Atlantic Fleet, one of the goals was to consolidate many of the Fleet oversight functions in a single command. Continuing legislative restrictions, however, have directed that "None of the funds available to the Department of Defense may be obligated to modify command and control relationships to give Fleet Forces Command operational and administrative

control of U.S. Navy forces assigned to the Pacific fleet." In recognition of this legislation, each Fleet commander has been delegated, by the Chief of Naval Operations (CNO), the authority to organize, train, and equip their assigned Navy forces. FFC is also tasked with responsibilities to generate Navy Global Force Management (GFM) solutions; be the unified voice for Fleet training requirements and policies to generate combat-ready Navy forces; and integrate readiness resource metrics for personnel, equipment, supply, training, and ordnance.

Prior consolidations

We review six prior Navy consolidation initiatives: the establishment of Naval Material Command (NAVMAT), Navy Munitions Command (NMC), and Naval Network Warfare Command (NAVNETWARCOM); the consolidation of Fleet Manning Control Authority (MCA) under FFC, the 2003 Human Resources (HR) Innovation initiative; and the realignment of the Chief of Naval Air Training (CNATRA) under PACFLT. In the three cases where the consolidated constructs were disestablished (NAVMAT, NMC, and HR Innovation), the reasons included increased levels of bureaucracy, formation of "shadow staffs" that duplicated efforts, and lack of anticipated benefits being realized. In the cases of NAVNETWARCOM and MCA consolidation under FFC, discussions with the staff at PACFLT indicated that they saw a decrease in their level of service from NAVNETWARCOM, while the MCA process was seen as "opaque" with limited insight into how assignments are made.

Fleet readiness funding

One of the main goals of the Single Readiness Integrator Framework proposed by FFC is to consolidate funding for Force Generation (Fg)—efforts related to managing readiness resources across all Optimized Fleet Response Plan (OFRP) phases to achieve unit certification for deployment. To better understand the context of BSO consolidation, we evaluated each Fleet BSO's readiness OMN funding in terms of its total OMN funding, using data from the President's Budget (PB) submission for fiscal year 2018 (FY 2018).

We found that, of the $21.6 billion programmed in SAGs 1A1A, 1A2A, 1B1B, and 1B4B in FY 2018, $18.1 billion (84 percent) are in the Fleet BSOs. The majority of these Fleet readiness funds (60 percent) are in PACFLT, with 40 percent in FFC. These funds represent 90 percent of the total PACFLT OMN funding and 75 percent of the total OMN funding in the FFC. They also represent the funding required to conduct both Fg and Force Employment (Fe) efforts in PACFLT. Thus, consolidating these funds under a single BSO in FFC would limit PACFLT's flexibility in determining funding realignments across its OMN portfolio and result in external control of funds for Fe.

Current Fleet readiness

We compare Fleet metrics for aircraft and ship material condition, using historical aircraft mission capability rates and ship Casualty Reports (CASREPs), to assess whether one Fleet had routinely superior rates. We found similar outcomes in both Fleets, by both aircraft Type/Model/Series (T/M/S) and ship class. Therefore, we would expect little to no change in these Fleet health metrics as a result of consolidating Readiness accounts under a single BSO. We did, however, note that aircraft Not Mission Capable, Maintenance (NMCM) and ship CASREPs are increasing for both Fleets, indicating a continuing degradation in readiness.

Reorganization factors

A management study in the *Harvard Business Review* found that only one-third of 57 business reorganizations reviewed "produced any meaningful improvement in performance." The article notes that this is due largely to the fact that there is a misunderstanding about the relationship between structure and performance. Ultimately, performance is not solely determined by the amount of and access to resources; rather, it depends on the quality of managers' decision making and their ability to execute decisions. Thus an organizational structure will improve outcomes only in so much as it improves executives' ability to make decisions faster and better.

Management literature also notes that consolidation, unity of command, and span of control are critical factors that must be considered in any reorganization, with benefits and challenges associated with each. For example, centralizing all decision making can reduce staffing requirements and lead to a single set of priorities, but if span of control is too broad or the information required to make decisions is not available, the effect will be less-than-optimal decisions. Thus, if the goal of reorganization is to improve performance, it should be based on an examination of the critical decisions that need to be made in an organization, and then choosing the organizational location and conditions that would best enable the decisions to be made.

Current Fleet readiness organization

In the current FFC/PACFLT construct, each Fleet has three Type Commands (TYCOMs), one each for Surface, Submarine, and Air. For each type, there is a Lead TYCOM on one coast with a Follow TYCOM on the other coast. Navy Shipyards (NSY) are owned by the Fleets and operated by Naval Sea Systems Command (NAVSEA).

In reviewing efforts related to the planning, programming, budgeting, and execution (PPBE) of the Fleets' readiness funds, we found two distinct areas of effort. The first, with respect to planning, programming, and budgeting of Fleet readiness funding, is a very structured process overseen by FFC, with participation from across the OPNAV

staff and Fleets. We would not envision that this process or the budgeting recommendations would change should consolidation be pursued.

The second area of effort, dealing with readiness funding execution, is where differences arise in Fleet priorities and decisions on where to take risk. Many of these execution-year decisions are driven by funding constraints and emergent requirements—and funding issues are further exacerbated when the Navy must operate under a Continuing Resolution. This is because the temporary spending bill not only limits the amount of funds available, but restricts some level of new work that can be put on contract. In the current construct, resolving differences in Fleet priorities and realignment of funds between the FFC and PACFLT BSOs is accomplished by the OPNAV staff—through the office of the Deputy Assistant Secretary of the Navy for Budget (FMB/N82).

Given the current funding and administrative control (ADCON) structure, each TYCOM's execution-year efforts are based on direction from its respective Fleet commander, vice a coordinated approach for each Lead/Follow TYCOM pairing.

Single Readiness Integrator Framework

We document a Single Readiness Integrator Framework, which is an organizational structure proposed by FFC for consolidating oversight of readiness funding and Fg responsibilities. The most significant aspects of this proposed framework are that it would: realign ADCON of all Lead TYCOMs under FFC; redesignate Follow TYCOMs as detachments under the ADCON of the Lead TYCOMs; and realign Puget Sound Naval Shipyard (NSY) from PACFLT to FFC. This would place all Continental U.S. (CONUS) Naval Shipyards (NSYs) under FFC and leave Pearl Harbor NSY and the Ship Repair Facilities (SRFs) at Yokosuka, Japan and Guam under PACFLT.

Analytic approach

To evaluate the potential effects of consolidation on Fleet readiness, we use optimization models as a framework to synthesize historical readiness factors, describe the key readiness objectives, and to understand the advisability of consolidating readiness funding. Based on discussions with the Fleets, we propose that the ultimate goal for readiness funding is to maximize operational readiness through a balance of achieving the Optimized Fleet Response Plan (OFRP), maximizing combat readiness (CR), ensuring Wholeness (W—which we equate with Fleet health), and maximizing operational availability (A_O)—both in the near- and far terms. The Fleet objective functions therefore can be seen as a function of these four components:

$$OR = f(OFRP, CR, W, A_O)$$

Our review, however, found that each Fleet commander's objective functions were different, situation dependent, and undocumented. Hence, it is not possible to

quantitatively model them—either to develop a baseline for comparison or to evaluate how they would deal specifically with a given scenario of resource reallocation. Thus, we developed proposed metrics and qualitatively assessed the potential effects that would be expected from the proposed readiness funding consolidation.

Other service readiness production organizations and processes

We reviewed PPBE processes for readiness funding requirements in the U.S. Air Force (USAF) and U.S. Army (USA) to understand similarities and differences when compared with the Navy. The USAF Centralized Asset Management (CAM) process uses a corporate structure involving participants from all USAF major commands, overseen by Air Force Materiel Command (AFMC) and Headquarters Air Force. AFMC then acts as the executive agent for these Readiness funds, with all funds contained in a single AFMC program element (PE). Execution-year funding changes are then executed in accordance with the readiness priorities established at the annual CAM Executive Committee session.

The U.S. Army (USA) processes for requirements development and execution of force generation funding are very similar to the current Navy processes, with USA's Forces Command's (FORSCOM) role being similar to the current FFC role with respect to ensuring consistency of readiness requirements and funding across FORSCOM, U.S. Army Europe (USAREUR), and U.S. Army Pacific (USARPAC). Army Materiel Command (AMC) is responsible for the programming and execution of Army depot funding—which is similar to Naval Air Systems Command's (NAVAIR) role for aviation depots.

Fleet Commander comments

We held discussions with eight current and former Fleet commanders. We found strongly held beliefs both for and against consolidation. Most agree that having a Single Readiness Integrator Framework would be more efficient, but many, particularly those who have commanded in the Pacific, feel it would be less effective and that the reorganization would cause a level of disruption that would degrade overall Navy readiness. Main points from these discussions:

- Strong Lead TYCOMs are the key to improving readiness—regardless of any other actions

- FFC believes it can seamlessly integrate all PACFLT force generation responsibilities using current processes and "battle rhythm"
    - Individuals who had command positions for both Fleets expressed a concern that this would be too broad a span of control for FFC

- Several individuals believed consolidation would result in a loss of stature for COMPACFLT, effectively becoming COMNAVPAC

  - Could negatively impact ally and adversary views on U.S. commitment to the Pacific

- With respect to Manning Control Authority (MCA) consolidation, the limited example of the FDNF Japan manning conference points to need for increased communication and transparency between the two Fleets.

Qualitative assessment

Consolidation effects on readiness

Our assessment indicates that the effect of consolidation on readiness is uncertain—consolidation may improve or degrade readiness. Importantly, we also note that it would be extremely difficult to determine the underlying causes for any changes that occurred, given the large number of exogenous factors and ongoing improvement efforts related to readiness.

Consolidation effects on feasibility constraints

Our discussions identified four constraints that would be influenced by the proposed FFC consolidation: (1) Conflicting Fleet priorities for depots; (2) Lack of funds transparency between the two BSOs; (3) Differences in tracking and reporting of Fleet metrics; and (4) Fleets optimizing based on their portion of a SAG's (e.g., 1A1A) funds versus having the entire SAG's funding under a single Fleet to allocate.

We find that benefits in terms of the first constraint, pertaining to a single voice on depot prioritization, are unique to the FFC-proposed organizational construct, but we estimate the potential benefit to be small, because of the current level of integration between the two Fleet logistics organizations and the fact that only one depot (Puget Sound Naval Shipyard) would transfer from PACFLT to FFC. For the remaining three constraints, we believe that the majority of benefits could be realized through better coordination and communication in the current organizational structure, without consolidation.

Potential unintended consequences

There are also a number of potential second- and third-order effects that could result from the proposed consolidation. These include geopolitical and political ramifications and frictions between the Fleets because of the lack of a unified Navy definition of readiness priorities. These effects include: the impression that the reduced role of PACFLT signals a lessening of U.S. commitment in the Pacific area of responsibility (AOR); the reduction of PACFLT's stature with allies and partners; COMPACFLT effectively becoming COMNAVPAC; and a reduction of COMPACFLT's stature reducing its influence in determining priorities within DOD and the Navy. In addition, during the transition, we expect there would be significant disruptions and

there is a risk of PACFLT creating a "shadow staff" to ensure that PACFLT equities and interests are properly tracked and communicated to FFC.

Recommendations

Based on the above factors, we recommend that the Navy retain the current BSO structure, consider increasing the Lead TYCOM responsibilities, authorities, and accountability; providing more standardized and detailed reporting on readiness funding metrics; increasing visibility with respect to readiness funding across both Fleets; including additional Fleet readiness performance metrics in the FFC Annual Report—covering both Fleets; and semiannual presentations by Lead TYCOM commanders to the Fleet Commanders Readiness Council (FCRC) regarding the health of its enterprises, significant differences between Fleets, and recommendations for priorities/funds alignment.

Conclusion

In comparing the current Navy readiness organizational structure with the proposed Single Readiness Integrator Framework, we found a number of processes and products that would remain unchanged regardless of whether or not consolidation was pursued. These include the Navy allocations within the Unified Command Plan (UCP), the determination of resources to support Global Force Management (GFM), the development of the readiness-funding POM requirements, and the number of required above threshold reprogramming (ATR) actions. Differences would be with respect primarily to the determination of execution-year readiness priorities and fund reallocations.

The implementation of a Single Readiness Integrator Framework may result in some efficiencies, but the potential benefits in terms of readiness are difficult to quantify given the lack of a common Navy definition of readiness priorities and the fact that each Fleet commander's readiness objectives and priorities are unique, undocumented, and situation dependent. There is also a range of external factors that affect Fleet readiness (e.g., Continuing Resolutions, unanticipated ship repairs, shipyard workforce increases, etc.) that, in conjunction with the previous factors result in our belief that a pilot initiative would not be able to accurately assess benefits due solely to consolidation

Former Fleet commanders noted that Lead/Follow TYCOM alignment and authority were key to any successful improvement in readiness. At present, the potential benefits of the Lead/Follow TYCOM construct appear to be offset by the TYCOM's strong alignment to their respective Fleet commanders. While this issue would be mitigated by the proposed Single Readiness Integrator Framework, we believe that the majority of benefits could be realized under the current organizational construct, with increased responsibility, authority, and accountability for the Lead TYCOM

commanders. Fleet commanders would still ultimately make execution-year readiness resource decisions, but with full visibility across both Fleets and the OPNAV staff.

In light of the potential geopolitical and political ramifications, the possible disruption that would result from consolidation, and the range of other factors currently being implemented to improve readiness, we recommend the Navy retain the current ADCON and BSO structure at this time, while increasing funding and readiness visibility between the Fleets and the OPNAV staff. By standardizing readiness metrics, criteria, and reporting across both Fleets, and increasing responsibility, authority, and accountability for Lead TYCOMs, we believe a significant portion of the proposed benefits of the Single Readiness Integrator Framework could be realized. This would also support the identification and implementation of information interfaces and requirements between the Fleets and support a more informed discussion of consolidation, should it be considered in the future.

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Glossary

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1A2A	Fleet Air Training SAG
1A5A	Aircraft Depot Maintenance SAG
1B1B	Mission and Other Ship Operations SAG
1B4B	Ship Maintenance SAG
A1	Air Force Deputy Chief of Staff for Manpower, Personnel, and Services
A10	Air Force Deputy Chief of Staff for Strategic Deterrence, and Nuclear Integration
A2	Air Force Deputy Chief of Staff for Intelligence, Surveillance, and Reconnaissance
A3	Air Force Deputy Chief of Staff for Operations, Plans, and Requirements
A4/7	Air Force Deputy Chief of Staff for Logistics, Engineering, and Force Protection
A5/8	Air Force Deputy Chief of Staff for Strategic Plans and Programs
A6	Air Force Deputy Chief of Staff for Information Dominance and Chief Information Officer
ACC	Air Combat Command (Air Force)
ADCON	Administrative Control
ADDU	Additional Duty
ADV	Advanced Flight Training
AETC	Air Education and Training Command (Air Force)
AF	U.S. Air Force
AFGSC	Air Force Global Strike Command
AFMC	Air Force Materiel Command
AFMC/CV	Air Force Materiel Command, Vice Commander
AFRES	Air Force Reserve
AFSOC	Air Force Special Operations Command
AFSPC	Air Force Space Command
AF WCF	Air Force Working Capital Fund
AIRFOR	Naval Air Forces (Lead TYCOM)
AIRLANT	Naval Air Force, Atlantic

ALC	Air Logistics Center (Air Force)
AMC	Air Mobility Command (Air Force)
AMC	Army Materiel Command
AMSRR	Aviation Management Supply and Readiness Reporting
ANG	Air National Guard
API	Aviation Preflight Indoctrination
A_o	Operational Availability
AOR	Area of Responsibility
AQ	Assistant Secretary of the Air Force for Acquisition
ASA(FM&C)	Assistant Secretary of the Army for Financial Management and Comptroller
ASN(FM&C)	Assistant Secretary of the Navy for Financial Management and Comptroller
ATR	Above threshold reprogramming
AvPol	Aviation Petroleum, Oils, and Lubricants (Air Force)
AVDLR	Aviation Depot Level Reparable (Navy)
BSO	Budget Submitting Office
BTR	Below threshold reprogramming
C2	Command and control
C7F	Commander, 7th Fleet
CAM	Centralized Asset Management (Air Force)
CASREP	Casualty Report (Ship/Submarine)
CCDR	Combatant Commander
CCMD	Combatant Command
CFLI	Core Function Lead Integrator (Air Force)
CINCLANTFLT	Commander-in-Chief, U.S. Atlantic Fleet
CMC	Commandant of the Marine Corps
CNA	Center for Naval Analyses
CNAF	Commander, Naval Air Forces
CNATRA	Chief of Naval Air Training
CNMC	Commander, Navy Munitions Command
CNO	Chief of Naval Operations
CNRC	Commander, Navy Reserve Command
CNRFC	Commander, Navy Reserve Forces Command
CNRMC	Commander, Navy Regional Maintenance Centers
COA	Course of action
COMAIRFOR	Commander, Naval Air Forces
COMLANTFLT	Commander, U.S. Atlantic Fleet
COMNAVAIR	Commander, Naval Air Systems Command

COMOMAG	Commander, Mobile Mine Assembly Group
COMPACFLT	Commander, Pacific Fleet
COMPTUEX	Composite Training Unit Exercise
COMSUBFOR	Commander, Naval Submarine Forces
COMSURFOR	Commander, Naval Surface Forces
COMUSFLTFORCOM	Commander, Fleet Forces Command
CONUS	Continental United States
CPFH	Cost per Flying Hour
CPSD	Cost per Steaming Day
CR	Combat Readiness
CSA	Chief of Staff of the Army
CSAF	Chief of Staff of the Air Force
CSG	Carrier Strike Group
CSMP	Current Ship's Maintenance Project
CVN	Aircraft Carrier, Nuclear Powered
CVW	Carrier Air Wing
DECKPLATE	Decision Knowledge Programming for Logistics Analysis and Technical Evaluation
Det	Detachment
DLR	Depot level reparable
DON	Department of Navy
DPEM	Depot Purchased Equipment Maintenance (Air Force)
DRRS	Defense Readiness Reporting System
DRRS-N	Defense Readiness Reporting System–Navy
Exp	Expenditures
Fc	Force Conceptualization
FCRC	Fleet Commanders Readiness Council
Fd	Force Development
FDNF	Forward Deployed Naval Forces
Fe	Force Employment
FFC	U.S. Fleet Forces Command
Fg	Force Generation
FHP	Flying Hour Program
FIAR	Financial Improvement and Audit Readiness
FMBoD	Fleet Maintenance Board of Directors
FMB	Deputy Assistant Secretary of the Navy for Budget
FMC	Fully Mission Capable
FMO	DON Office of Financial Operations
Forces For	Forces For Unified Commands

FORSCOM	Forces Command (Army)
FRC	Fleet Readiness Center
FRP	Fleet Response Plan
FRS	Fleet Replacement Squadron
FY	Fiscal year
GFM	Global Force Management
GFMAP	Global Force Management Allocation Process
GFMIG	Global Force Management Implementation Guidance
GWOT	Global War on Terror
HAF	Headquarters U.S. Air Force
HAF/A4	HAF Deputy Chief of Staff for Logistics, Engineering, and Force Protection
HQ	Headquarters
IDTC	Interdeployment training cycle
ISIC	Immediate superior in command
J-3	Joint Staff Director for Operations
JTFEX	Joint Task Force Exercise
LOE	Line of effort
MACOM	Major Command (Army)
MAJCOM	Major Command (Air Force)
MAP	Master Aviation Plan
MC	Mission Capable
MCA	Manning Control Authority
MF&T	Missions, functions, and tasks
MHA	Management Headquarters Activity
MHQ	Maritime Headquarters
MOA	Memorandum of Agreement
MOC	Maritime Operations Center
NACCS	Naval Air Crew Candidate School
NAE	Naval Aviation Enterprise
NASC	Naval Aviation Schools Command
NAVAIR	Naval Air Systems Command
NAVCENT	U.S. Naval Forces Central Command
NAVEUR	U.S. Naval Forces Europe
NAVNETWARCOM	Naval Network Warfare Command
NAVSEA	Naval Sea Systems Command
NCC	Navy Component Command
NECC	Navy Expeditionary Combat Command
NETC	Naval Education and Training Command

NGB	National Guard Bureau
NMC	Navy Munitions Command
NMCM	Not Mission Capable, Maintenance
NMCS	Not Mission Capable, Supply
NMS	National Military Strategy
NNSY	Newport News Naval Shipyard
NPC	Navy Personnel Center
NSY	Naval Shipyard
O&M	Operations and Maintenance
Obs	Obligations
OCO	Overseas Contingency Operations
OCS	Officer Candidate School
OFRP	Optimized Fleet Response Plan
OMN	Operations and Maintenance, Navy
OOR	Out of Reporting (Aircraft)
OPCON	Operational Control
OPLAN	Operations Plan
OPNAV	Office of the Chief of Naval Operations
OPNAV N8	Deputy Chief of Naval Operations for Integration of Capabilities and Resources
OPNAV N83	Chief of Naval Operations: Fleet Readiness Division
OPNAV N9	Deputy Chief of Naval Operations for Warfare Systems
OPTAR	Operating Target
OR	Operational readiness
OSD(C)	Office of the Secretary of Defense Comptroller
PACAF	Pacific Air Forces
PACFLT	U.S. Pacific Fleet
PACOM	U.S. Pacific Command
PB	President's Budget
PBIS	Program Budget Information System
PEO	Program Executive Officer
PGM	Product Group Manager
PHNSY	Pearl Harbor Naval Shipyard
PMCM	Partially Mission Capable, Maintenance
PMCS	Partially Mission Capable, Supply
PNSY	Portsmouth Naval Shipyard
POM	Program Objective Memorandum
PPB	Planning, programming, and budgeting
PPBE	Planning, programming, budgeting, and execution

PRI	Primary Flight Training
PSNSY	Puget Sound Naval Shipyard
RAA	Responsibility, authority, and accountability
ROTC	Reserve Officers' Training Corps
RS	Resource Sponsor
RSS	Rescue Swimmer School (Aviation)
RTC	Recruit Training Command
SAF/FM	Assistant Secretary of the Air Force for Financial Management
SAF/FMB	Deputy Assistant Secretary for Budget (Air Force)
SAG	Sub-Activity Group
SCIR	Subsystem Capability and Impact Reporting
SECDEF	Secretary of Defense
SECNAV	Secretary of the Navy
SI	Special Interest
SMEC	Ship Maintenance Executive Council
SMS	Ship Master Schedule
SOLANT	South Atlantic Force, U.S. Atlantic Fleet
SORTS	Status of Resources and Training System
SPAWAR	Space and Naval Warfare Systems Command
SPM	Single Program Manager
Sqdn	Squadron
SRF	Ship Repair Facility
SUBFOR	Submarine Forces (Lead TYCOM)
SUBPAC	Submarine Forces, U.S. Pacific Fleet
SURFLANT	Naval Surface Force, Atlantic
SURFOR	Naval Surface Forces (Lead TYCOM)
SWE	Surface Warfare Enterprise
SWOT	Strengths, weaknesses, opportunities, and threats
T/M/S	Type/model/series
T&R	Training and Readiness (Aviation)
T-Rating	Training and Readiness Rating (Aviation)
TTX	Table-top exercise
TYCOM	Type Command
UCP	Unified Command Plan
USA	U.S. Army
USAF	U.S. Air Force
USAFE	U.S. Air Forces Europe
USAREUR	U.S. Army Europe
USARPAC	U.S. Army Pacific

U.S.C.	U.S. Code
USE	Undersea Enterprise
USFF	U.S. Fleet Forces Command
USN	U.S. Navy
USNA	U.S. Naval Academy
USWEX	Undersea Warfare Exercise
Vis	Visibility
VTC	Video teleconference
W	Wholeness
WCF	Working Capital Fund
WSS	Weapon System Sustainment
Xfr	Transfer

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Background

Study objective

In the Chief of Naval Operations' (CNO's) January 2016 document, *A Design for Maintaining Maritime Superiority* [1], he identifies four lines of effort for the Navy to adapt to the emerging security environment. Task 5 in the "Blue Line of Effort" (Blue LOE) is "Examine the organization of United States Fleet Forces Command, Commander, Pacific Fleet and their subordinate commands to better support clearly defining operational and warfighting demands and then to generate ready forces to meet those demands."

In support of this task, the Deputy Chief of Naval Operations for Integration of Capabilities and Resources (OPNAV N8) asked the Center for Naval Analyses (CNA) to explore the implications of a structure that implements a single readiness account management framework across the Atlantic- and Pacific-based forces, and to compare this option to the current framework regarding effectiveness, responsiveness, efficiency, and risk in terms of maximizing support for the Optimized Fleet Response Plan (OFRP), combat readiness, material condition of the Fleet, and Operational Availability (A_O)—both in the near- and long term.

The key question addressed by this study is whether Navy readiness could be improved, without impacting operational responsiveness, through the consolidation of Navy Readiness funds into a single Fleet Budget Submitting Office (BSO). The Readiness accounts to be assessed are all sub-activity groups (SAGs) within the Operations and Maintenance, Navy (OMN) appropriation, and fall into two categories:

- OMN SAGs currently managed by both the FFC and PACFLT BSOs
  - 1A1A, Mission and Other Flight Operations. These funds, commonly referred to as the Flying Hour Program (FHP), provide funding to support all operational unit flight hours. Major categories of funding are depot-level reparables (DLRs—aircraft components that are repaired at intermediate- or depot-level maintenance), fuel, maintenance, and contracts.
  - 1A2A, Fleet Air Training. Similar to SAG 1A1A, this account funds the FHP for the Chief of Naval Air Training (CNATRA) and the Fleet

Replacement Squadrons (FRSs). Major categories are identical to SAG 1A1A—DLRs, fuel, maintenance, and contracts.

- 1B1B, Mission and Other Ship Operations. Funds steaming hours for ships and submarines.
- 1B4B, Ship Maintenance. Funding for naval shipyards (NSYs), Navy ship repair facilities (SRFs), and private-sector providers for the conduct of depot-level ship maintenance availabilities.

- Aircraft Depot Maintenance, which is currently funded entirely through the Commander, Naval Air Systems Command (COMNAVAIR) BSO.
  - 1A5A, Aircraft Depot Maintenance. Funds support the operation of the aviation depot maintenance activities.

Fleet Forces Command history

Sailing New Seas

In March 1998, Admiral J. Paul Reason, Commander-in-Chief, U.S. Atlantic Fleet (CINCLANTFLT), with David G. Freymann, published a paper through the Center for Naval Warfare Studies' Newport Papers series entitled *Sailing New Seas* [2]. The stated purpose of the paper was to "stimulate thinking, discussion, and new approaches within the Navy" in a post-industrial era. Admiral Reason acknowledges nine individuals for their contributions to the paper, including Vice Admiral Vernon E. Clark, then Director for Operations (J-3), Joint Staff, and formerly Commander Second Fleet.

"A new age calls for a new change machine," writes Admiral Reason, who explains:

> Metaphorically speaking, a fulcrum and lever, and the wisdom to use them effectively, are needed to move the Navy into the next era. … The fulcrum consists of the mission and mission-related tasks. What must the Navy be able to do, and how swiftly?… The lever is data[1]…Yet it is not enough simply to possess the tools for change. To

[1] "By data is meant something more precise than what has usually been called 'data'—namely, mere numbers generated by analyses of questionable relevance and rigor, supported by authoritative voices of experience. Data is real information, derived from accurate, verifiable measurements based on well-defined, meaningful standards. Numbers are fluff, often prettily dressed up as 'data'" [2: p. 5, footnote]

> use the lever and fulcrum correctly, wisdom is needed—wisdom which stems from a thorough understanding of the Navy's missions, mission-related tasks, capabilities, and readiness[2] [2: p. 5].

Part One of *Sailing New Seas* describes the environment in which the U.S. Navy found itself in 1998, and the changes in both the environment and threats that had arisen in the "Information Age." To address these challenges, Admiral Reason notes that the Navy's response needs to become quicker, cheaper, and better. In Part Two ("What Needs to be Done?"), the Admiral lays out how these challenges could be addressed in terms of essential Navy capabilities—command and control (C2), force structure, Fleet organization, and warfare community representation and leadership in "the Next Navy." It is in this part of the paper that a new Fleet organizational structure is proposed that has strong similarities to the FFC construct Admiral Clark would pursue when he became CNO, except that Commander, Naval Forces in the United States (COMNAVUSA) was not to be dual-hatted as a Fleet commander.

Admiral Reason proposed the establishment of the new COMNAVUSA, with new structures for the CINC, Atlantic Fleet— ($CINCLANTFLT_{next}$) and CINC, Pacific Fleet ($CINCPACFLT_{next}$)—stating:

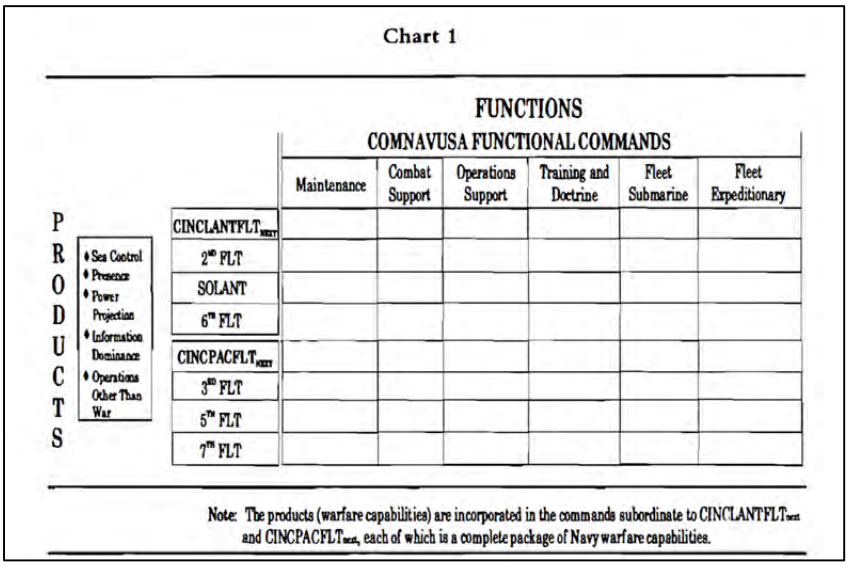
> Commander, Naval Forces in the United States (COMNAVUSA) provides support in training, tactical development, personnel, maintenance, communications, intelligence, and logistics to the Navy component commanders, worldwide. COMNAVUSA is the provider of all forces to $CINCLANTFLT_{next}$ and $CINCPACFLT_{next}$ for operation by their subordinate commanders. Headquarters for COMNAVUSA is Norfolk, Virginia.
>
> In light of the foregoing considerations, this Newport Paper sets forth a notional structure for the next Navy, a structure that improves the effectiveness of the Navy while realizing efficiencies that will be necessary in the future. The proposed organization, composed of an operational structure and a support structure (see Chart 1 [Figure 1]), is intended to meet efficiently the needs of the next Navy while it prepares to become the Navy-after-next.
>
> Specifically, the primary objective of this reorganization is at least to maintain quality in the "product line" (warfare capabilities) at current operational levels, while consolidating functions at the support levels [2: p. 33].

[2] "Readiness again raises the issue of data. Evaluation of the Navy's readiness must be based on meaningful, consistently applied, quantifiable measures of effectiveness…. Current assessments of readiness are too often inadequate, inaccurate, misleading, or irrelevant" [2: p. 5, footnote].

The proposed relationships and responsibilities for this new Navy organization are shown in Figure 1, which also includes the Navy's Numbered Fleets and the South Atlantic Force, U.S. Atlantic Fleet (SOLANT). The paper notes:

> The next Navy's organization realizes efficiency in a modern matrix scheme, in which the columns are functions (e.g., maintenance, training, personnel, logistics), and the rows are warfare capabilities (see Chart 1 [Figure 1]). One advantage that immediately results is a sharpening of command focus. COMNAVUSA focuses on effective accomplishment of functions necessary to enable and sustain naval warfare; $\text{CINCLANTFLT}_{\text{next}}$ and $\text{CINCPACFLT}_{\text{next}}$ focus on the operation and fighting of naval forces at sea. As the Navy component commanders for the combatant CINCs, they have control of all Navy operations, either directly or through their subordinate commanders. Subordinate NFCs are routinely assigned as joint force commanders or as the Navy component commanders of joint force commands.
>
> Efficiency is also immediately achieved by an elimination of redundancy. Today's Navy has six major type commands, each one having its own maintenance organization, composed of experts and supporting personnel. Without cutting the numbers of "value-added" maintenance experts, the next Navy obtains the following benefits from the consolidation of redundant functions [2: p. 38].

Figure 1. Notional organizational structure for "the Next Navy"



Source: *Sailing New Seas*, Chart 1 [2: p. 34].

Establishment of Fleet Forces Command

In 2006, then–Chief of Naval Operations (CNO) Admiral Vernon Clark established U.S. Fleet Forces Command (FFC), with the intent of consolidating all Fleet management. On its website, FFC notes the following:

> On 23 May 2006, the Chief of Naval Operations (CNO) issued OPNAV NOTICE 3111, Ser DNS-33/6U827232, that disestablished the Commander, Fleet Forces Command (COMFLTFORCOM) and Commander, U.S. Atlantic Fleet (COMLANTFLT) and renamed COMLANTFLT to Commander, U.S. Fleet Forces Command (COMUSFLTFORCOM), ordered to carry out the missions currently performed by COMFLTFORCOM and COMLANTFLT and serve as primary advocate for fleet personnel, training, requirements, maintenance, and operational issues, reporting administratively directly to the CNO as an Echelon 2 command. All forces reporting to COMLANTFLT or COMFLTFORCOM will now report to COMUSFLTFORCOM effective immediately.[3]

In discussions with former Fleet commanders who were involved in the establishment of FFC, the CNA study team learned that CNO Clark's decision was based on two key factors:

1. A desire to consolidate Fleet oversight under a single entity, resulting in a single commander with responsibility and authority for Fleet readiness

2. A large shift of Navy forces to the Pacific, decreasing the amount of direct Fleet management to be accomplished by the COMUSFLTFORCOM and COMLANTFLT staffs.

Inouye Amendments/Schatz Amendment

Although FFC officially stood up in 2006, the realignment had been discussed for several years prior. Seeing the establishment of FFC as diminishing PACFLT's influence and U.S. commitment in the Pacific, U.S. Senator from Hawaii Daniel Inouye introduced language that would be included in appropriation or emergency supplemental bills from 2004 to 2015 that restricted changes in the command and control of PACFLT-assigned forces or in personnel assigned to the Pacific Fleet. The language in these amendments (Appendix A: Senator Inouye Amendments) evolved over time, but consistently prevented the transfer of authorities from PACFLT to FFC.

[3] http://www.public.navy.mil/usff/Pages/history.aspx.

The DOD Appropriations Act for fiscal year (FY) 2016 was the first year following the death of Senator Inouye where language on this issue was not included in the legislation. In the Consolidated Appropriations Act of 2017, however, Senator Brian Schatz of Hawaii introduced the language below in section 8058:

> None of the funds available to the Department of Defense may be obligated to modify command and control relationships to give Fleet Forces Command operational and administrative control of United States Navy forces assigned to the Pacific fleet: Provided, That the command and control relationships which existed on October 1, 2004, shall remain in force until a written modification has been proposed to the House and Senate Appropriations Committees: Provided further, That the proposed modification may be implemented 30 days after the notification unless an objection is received from either the House or Senate Appropriations Committees: Provided further, That any proposed modification shall not preclude the ability of the commander of United States Pacific Command to meet operational requirements.

This language differs slightly from previous versions, allowing the Navy to propose changes via a written modification and adding a new requirement that any proposed modification shall not preclude U.S. Pacific Command (PACOM) from meeting operational requirements.

Because this study evaluates potential advantages, disadvantages, and risks associated with consolidation, the Navy notified the Senate Appropriations Committee that the study was being conducted, and that the study team's evaluation of potential structures would require congressional notification before any possible actions were taken.

Prior consolidation efforts

In the past, the Navy has pursued a number of organizational consolidations to provide single unifying organizations to standardize the management and delivery of such things as operational training, personnel management, and logistics. In this section, we review five prior consolidation efforts[4] that are analogous with the

[4] Several people we met with also mentioned the establishment of Commander, Navy Installations Command (CNIC) as an example where consolidation and centralization as the sole provider of shore capability has led to a perceived lower level of service at a higher cost. We did not examine the validity of these observations, but simply note for completeness.

proposed Single Readiness Integrator Framework, and the factors that appear most influential to the success or failure of these initiatives. These prior consolidations are

- Establishing Naval Material Command (NAVMAT)
- Implementing Commander, Navy Installations Command (CNIC) Civilian Human Resources (HR) innovation
- Consolidating Manning Control Authority (MCA) under FFC
- Standup of the consolidated Navy Munitions Command (NMC) under FFC
- Standup of the consolidated Naval Network Warfare Command (NAVNETWARCOM) under FFC
- Realigning CNATRA under the Commander, Naval Air Forces, in PACFLT.

Establishing Naval Material Command (NAVMAT)

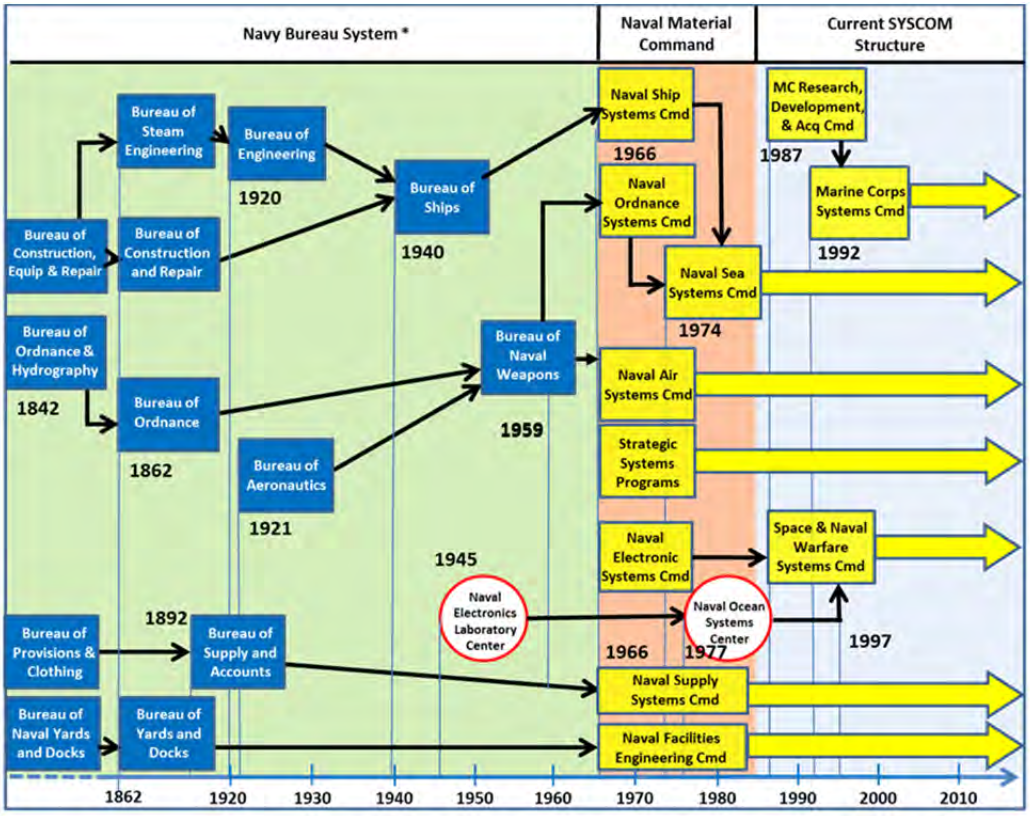
In his 1995 study regarding Naval Sea Systems Command (NAVSEA) Headquarters [3], Vice Admiral William Rowden (Retired) discusses the stand-up and eventual disestablishment of the Naval Material Command (NAVMAT). As shown in Figure 2, in 1966 the Secretary of the Navy (SECNAV) decided to transfer responsibility for equipping the Fleet—which had previously been done directly through the Bureau Chiefs—to the Chief of Naval Operations (CNO). A Navy Material Command (NAVMAT) was established, and the Naval Bureau System was converted to a new Systems Command (SYSCOM) construct. NAVMAT was commanded by the Chief of Naval Material (CNM), a four-star admiral who reported directly to the CNO, and who was responsible for the oversight of all Naval SYSCOMs. Admiral Rowden notes:

> The Chief of Naval Material and the Material Command were disestablished in 1985. John Lehman, Secretary of the Navy, reported in his Posture Statement to the Congress that the disestablishment of NAVMAT was "de-organizing and de-centralizing the bureaucracy." He went on to say that NAVMAT headquarters authority had been distributed among five Systems Commands and that 450 positions had been eliminated in the process. As it turned out, positions were eliminated, but no personnel were declared redundant. They were all reassigned to vacant billets elsewhere in the Navy [3].

Overall, the NAVMAT consolidation was deemed an example of *dis*economies of scale, where the benefits of centralized oversight and control were not viewed as being commensurate with the resources required. Today, the SYSCOM commanders report directly to the Assistant Secretary of the Navy for Research, Development, and

Acquisition (ASN(RD&A)) for their acquisition roles and to the CNO (or CMC in the case of Marine Corps Systems Command) for Administrative Control (ADCON).

Figure 2. Evolution from Navy Bureau system to today's SYSCOM organizations



Implementing CNIC Civilian HR innovation

In September 2013, the Deputy Assistant Secretary of the Navy for Civilian Human Resources presented a briefing entitled, "Innovation Promises Are Not Always Delivered: A Case Study from the Department of the Navy" [4]. In the briefing, she notes that the Commander, Navy Installations Command (CNIC) proposed a Civilian Human Resources (HR) innovation initiative that was intended to "Delayer organizations, Eliminate duplication and excess outlays, Centralize functions, Implement best business practices, and Create the surge infrastructure for Sea Power 21." This initiative was approved by the CNO on February 5, 2003 and implemented. Over time, customers and HR providers noted issues with the new structure, and a comprehensive review found that this centralized approach was ultimately unsuccessful due to the following main factors:

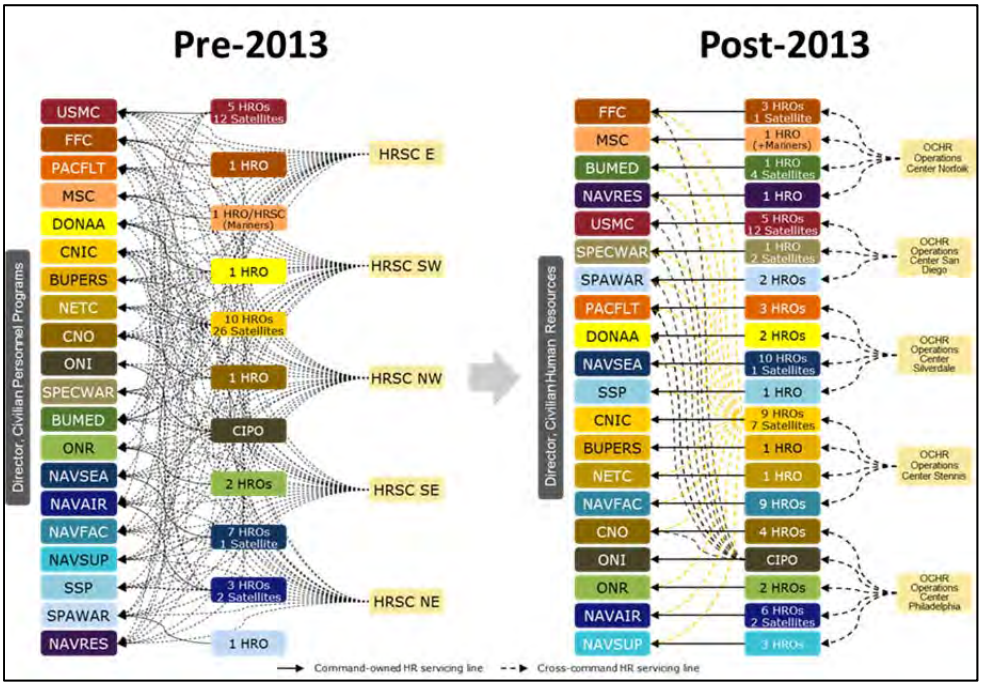
- Organizational culture is key—one size does not fit all
  - In the Navy, leaders are "captain of their own ship"
  - Leaders are held responsible for all aspects of their organization, so they need to have authority over all aspects of their business

- When strategic functions are too far away from the customer, duplication occurs
  - Shadow staff are a common phenomenon across industries and functions (e.g., IT, finance)

- Servicing model not consistently applied throughout the enterprise
  - HR funding and delivery widely varied
  - Difficult to deploy common processes and technology across the enterprise [4]

Based on the comprehensive review, civilian HR service organization was restructured as shown in Figure 3, decentralizing HR offices (HROs) and aligning them with specific commands.

Figure 3. DON "As Is" and "To Be" Civilian HR service organization



Source: DASN Civilian Human Resources Briefing, Sep 2013 [4]

In the context of consolidating Fleet readiness funding, the concepts of ensuring direct interfaces, potential duplication of effort, and shadow staffs seem to be lessons learned that should be considered prior to implementation.

Several people we met with also mentioned the establishment of CNIC as an example where consolidation and centralization to a sole provider of shore capability has led to a perceived lower level of service. Evaluation of the CNIC consolidation is beyond the scope of this study, but it is the subject of an ongoing CNO directed study to evaluate the potential benefits of consolidating some level of functions across CNIC, the Naval Facilities Command (NAVFAC), and the Deputy Chief of Naval Operations for Fleet Readiness & Logistics (OPNAV N4).

Consolidating Manning Control Authority under FFC

Manning Control Authority (MCA) was consolidated under FFC when FFC was established. Thus the FFC Director of Personnel Allocation and Development (N1) exercises MCA duties for both FFC and PACFLT. As noted in Military Personnel Manual 1306-100 (MILPERSMAN 1306-100), *Enlisted Distribution Management System* [5]

> **3. b. Assignment of an Activity to an MCA**. All activities are assigned to one of two MCAs. All sea commands and commands in direct support of the fleet fall under Commander Fleet Forces Command. All other shore duty relating to training, recruiting, and joint commands remain under Commander Naval Personnel Command.

With MCA consolidation, PACFLT N1 staffing was reduced, but a smaller organization was retained to coordinate with PACFLT units and support FFC N1 in its MCA duties. Discussions with PACFLT indicated that there were efficiencies realized through the consolidation, but that they see the current MCA staffing process as "opaque," in that they do not understand the business rules by which decisions are made.

An example presented was manning of Forward Deployed Naval Forces (FDNF) in Japan. Per Manning Control Authority Fleet Directive 15-1, *Manning Target Levels* [6], the required Fit/Fill levels for FDNF Japan units are 92-percent/95-percent, with the exception of Fast Attack Submarines (85-percent/95-percent) and Mine Counter-Measures (95-percent/95-percent). FDNF Japan manning, however, is lower than the requirement, while CONUS manning is in excess of its Fit/Fill requirement.

To better understand and address the factors that have caused this imbalance, the Commander, 7th Fleet (C7F) held a conference in Japan in June 2017, with participants from FFC, PACFLT, the PACFLT TYCOMs, 7th Fleet, and the Center for Naval Analyses (CNA). The CNA attendee noted that the FFC N1 staff attended by

video teleconference (VTC), and that they were not responsive to requests for specific details on how manning decisions were made. Personnel at 7th Fleet were particularly concerned with decisions that assigned personnel to lower-priority billets, leaving higher-priority billets (as submitted by the Immediate Superior In Command (ISIC) and TYCOM) vacant. PACFLT sees this lack of transparency as troubling and, though it understands that personnel resources are scarce, it believes that there should be more visibility of the actual processes used.

MCA provides a historical test case for consolidation. PACFLT's concerns about outcomes, collaboration, and visibility demonstrate that it is not certain that consolidation will lead to results as good as separate authorities. In particular, FFC, as MCA, imposed an allocation of resources within 7th Fleet that is different from that 7th Fleet would use even when provided with 7th Fleet's allocation. This suggests that FFC, as MCA, assumes that it has better information or can make a better decision than the local commander. If, as is typical, we assume that the local commander has the best information and knows best about the local allocation of resources, lower readiness resulted in this case. Furthermore, the lack of explanation and dialogue suggests that information flows across the Fleet can be difficult to achieve.

Standup of the consolidated Navy Munitions Command under FFC

In this report, we will briefly discuss the Naval Munitions Command (NMC) history and focus on those areas most closely aligned with the proposed BSO consolidation. A more comprehensive discussion of the history of NMC, from its standup in June 2006 to its disestablishment in January 2015, and the issues it encountered can be found in CNA's *Reorganization of Navy Munitions Command Pacific* [7].

As noted in the CNA research memorandum [7], NMC was established through a COMUSFLTFORCOM/COMPACFLT Memorandum of Agreement (MOA): "NMC's standup was intended to centralize the management of all Navy munitions by creating a single voice for Fleet ordnance and mine warfare support. This single voice was to

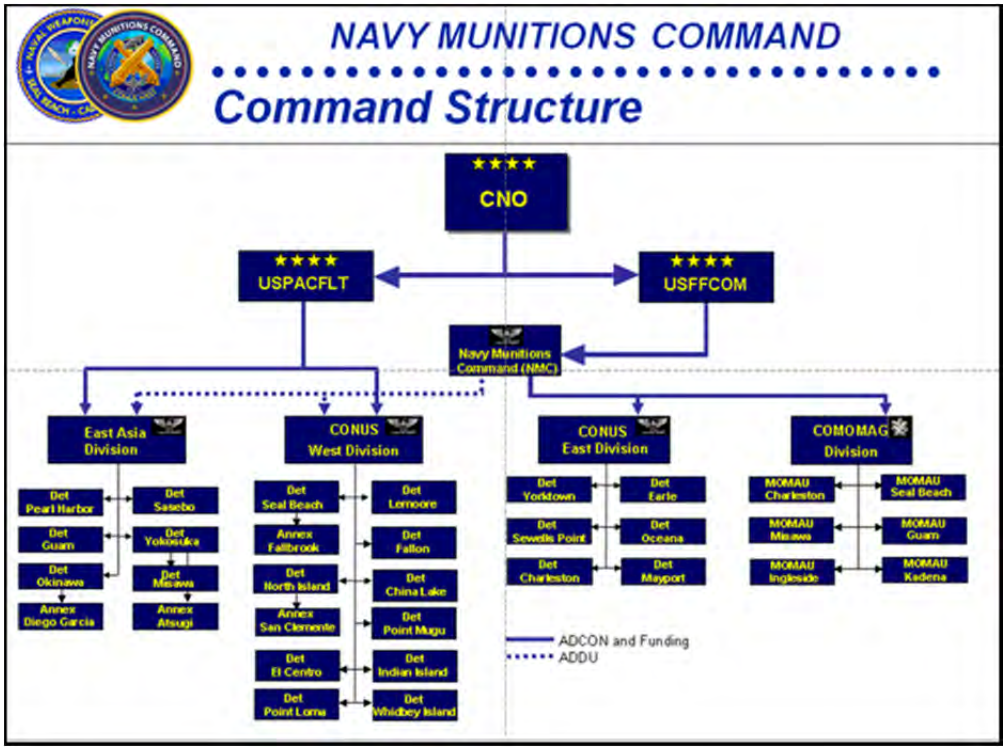
- improve the efficiency and effectiveness of Fleet ordnance and mine warfare support;
- standardize policies, processes, and best business practices;
- consolidate resources;
- serve as the resource advocate to the sponsor; and

- implement continuous process improvements of Fleet ordnance and mine warfare support" [8].

The organizational structure of NMC is shown in Figure 4. Per the MOA, the NMC Commander was dual-hatted as commander of NMC (CNMC—under FFC) and commander of the newly formed NMC Pacific (NMCPAC). He had oversight of all Navy munitions divisions, with ADCON over the FFC divisions (CONUS East and Commander, Mobile Mine Assembly Group, or COMOMAG) and additional duty (ADDU) authority over the PACFLT divisions (East Asia and CONUS West). ADCON and funding for the East Asia and West CONUS divisions, however, continued to be through PACFLT and BSO 70.

The consolidated NMC organizational structure in Figure 4 is similar to the current organizational construct for Lead and Follow TYCOMs, effectively led to the CNMC being an adviser to both COMUSFLTFORCOM and COMPACFLT, but the divisions' activities and priorities were ultimately driven by their respective Fleets, versus a coordinated approach driven by CNMC.

Figure 4. Organization of consolidated Naval Munitions Command



Source: Naval Weapons Station Seal Beach and Navy Munitions Command, CONUS West Division Overview Briefing, October 25, 2007 [9].

Citing misalignment of command and control (C2) relationships, particularly with respect to financial aspects, and deficiencies with the current structure, FFC and PACFLT decided in October 2014 to terminate the MOA. NMC was officially terminated in an OPNAV Note [10] in January 2015, with PACFLT assuming all responsibilities for the East Asia and CONUS West Divisions.

The CNMC experience was terminated in part because the command and control lines were poorly designed. West Division's priorities and direction came primarily from PACFLT. East Division's priorities and direction came primarily from FFC. As a result, CNMC, in leading the overall organization, had little true authority and had to navigate between priorities from the two Fleets, which sometimes conflicted.

The Lead TYCOMs in the current structure are in positions that have some similarities to CNMC's. They have little authority over the Follow TYCOM, whose primary responsibility is to their direct Fleet commander. Further, the Lead TYCOM has to navigate sometimes conflicting priorities in trying to set policies for the force that it leads. In a revised structure with a single TYCOM, and a detachment reporting to them, C2 structure of the TYCOM would be streamlined and clarified. The proposed Single Readiness Integrator Framework would remedy the issues CNMC had with two separate command chains and funding streams, as readiness priorities would be determined solely by FFC.

Standup of the consolidated NAVNETWARCOM under FFC

A *CHIPS* magazine article on comments by the first NAVNETWARCOM Commander, VADM Richard W. Mayo [11] at the command's July 11, 2002 standup ceremony, summarizes the intent of the new organization:

> The establishment of Naval Network Warfare Command specifically addresses organizational alignment. Naval Network Warfare Command will do three things: (1) We will support Admiral Natter as Commander [U.S.] Fleet Forces Command in organizing, training and equipping our ships and Sailors to operate the information network and realize information technology's full capability; (2) We will operationally support all Fleet commanders in the Navy—Atlantic Fleet, Pacific Fleet, Naval Forces Europe, and Naval Forces Central Command in the day-to-day running of our global information network in support of Naval and Joint Commanders; and (3) We will integrate, assess, and deliver the "full requirement" for Navy's information technology, information operations, and space requirements.

Unlike the case with NMC, all ADCON and funding for NAVNETWARCOM and its subordinate units comes through FFC. To support these efforts, funds that had been in PACFLT (BSO 70) for these functions were transferred to FFC (BSO 60). While this eliminated the issue of differing Fleet priorities, PACFLT noted that it saw a decrease in support and funding for the previously supported PACFLT programs, and that the level of support for FFC was higher than for PACFLT. The following examples were provided by the PACFLT staff:

- PACFLT requires specific software and hardware solutions from Citrix Systems, Incorporated, which were supported in the funding transferred to FFC. NAVNETWARCOM subsequently determined that Citrix was a PACFLT unique requirement, so it would not be supported by NAVNETWARCOM, requiring PACFLT to find other funding to support this requirement.

- NAVNETWARCOM terminated funding for all PACFLT VTC requirements, but continued to fund those of FFC.

During discussions with the PACFLT staff, they also noted that they perceived an overall decrease in the level of priority for PACFLT network requirements within the new NAVNETWARCOM, particularly at the more remote PACFLT locations. Based on this experience, and the lack of defined business rules and priorities, PACFLT is concerned about decreased support and advocacy if all Readiness funds are consolidated under FFC.

Realigning CNATRA under CNAF, in PACFLT

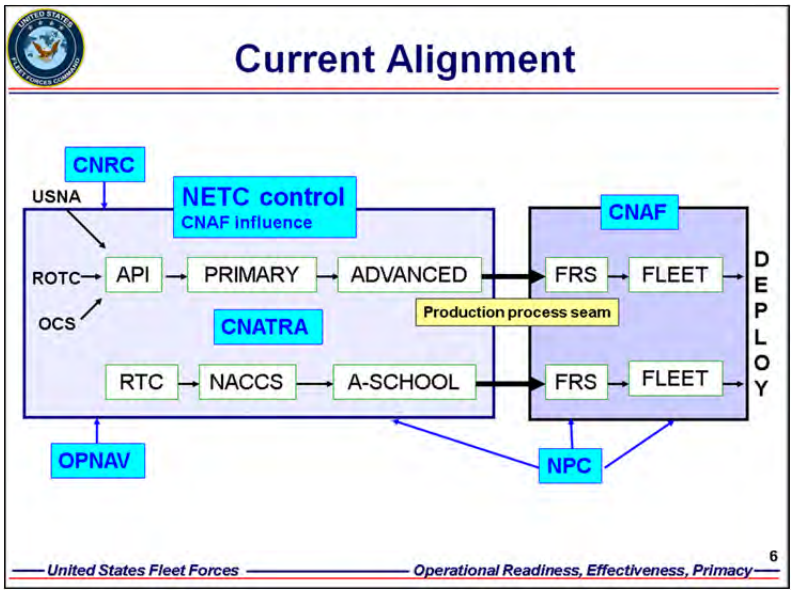
The realignment of CNATRA under the Commander, Naval Air Forces (CNAF) had two aspects. The first was the realignment of responsibilities and funding for aviation training overall. The second was the realignment of CNATRA and its SAG 1A2A funding, which previously had been under Naval Education and Training Command (NETC), to CNAF.

In a March 2006 briefing to the Vice Chief of Naval Operations (VCNO) [12], the Commander of NETC and the CNAF recommended changes to the aviator production process shown in Figure 5 to a new structure, with a difference in roles for CNATRA aligned under CNAF, as shown in Figure 6. The briefing identifies four desired effects:

- Leverage core competencies of MPT&E and NAE
- Preserve MPT&E control of individual training and content
- NAE gains appropriate span of control over Naval aviator production and Naval Air Force management
- Align under core business lines to increase operational efficiency.

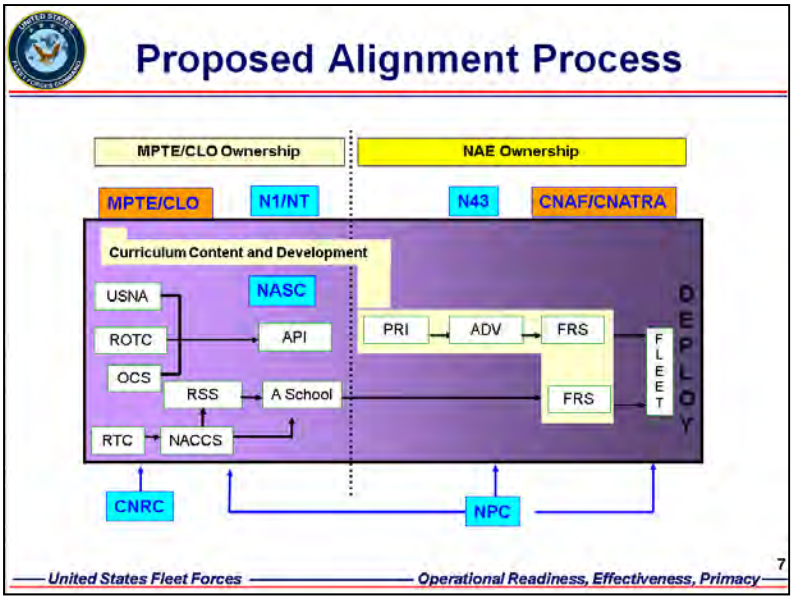
The acronyms in Figures 5 and 6, not previously defined, are included in Figure 7.

Figure 5. Aviation production process alignment—pre-realignment



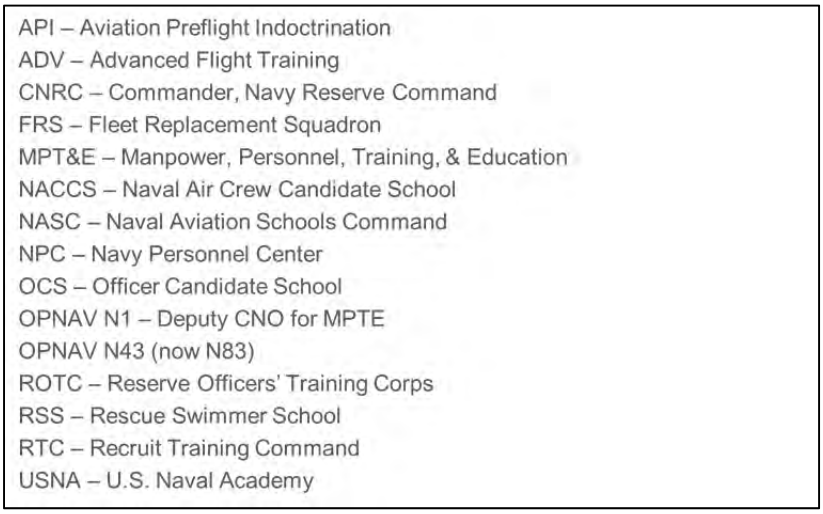
Source: Aviation Production Process Alignment Decision Brief to VCNO [12].

Figure 6. Aviation production process alignment—post-realignment



Source: Aviation Production Process Alignment Decision Brief to VCNO [12].

Figure 7. Aviation production process acronyms not previously defined



This new structure and realignment of responsibilities remains in place. The main difference between this consolidation and the previous examples is that CNATRA existed as a single entity prior to the realignment, so though FFC's oversight responsibilities changed, this was not a consolidation of two separate entities doing similar functions. The realignment does, however, provide an example where a single Fleet is responsible for funding a function that supports both Fleets, where the results have been successful.

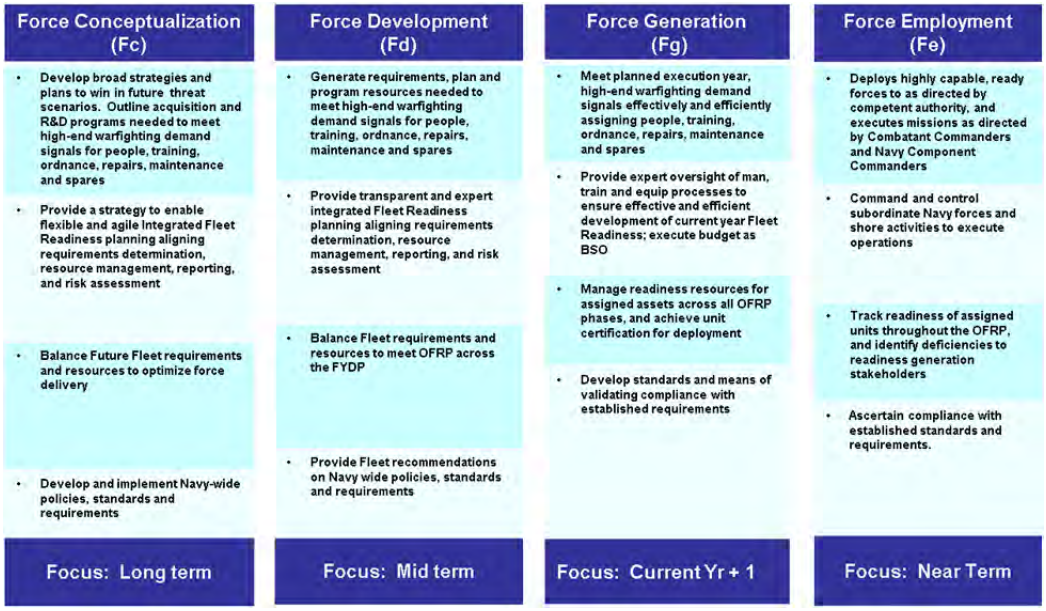
Readiness phases

The Navy has broken out Fleet readiness into four interrelated process phases, which are time-based in relation to executing the Navy's Optimized Fleet Response Plan (OFRP) and Fleet deployments. These four phases are

- Force Conceptualization (Fc)
- Force Development (Fd)
- Force Generation (Fg)
- Force Employment (Fe).

Key aspects of these four phases, and their timing, are shown in Figure 8.

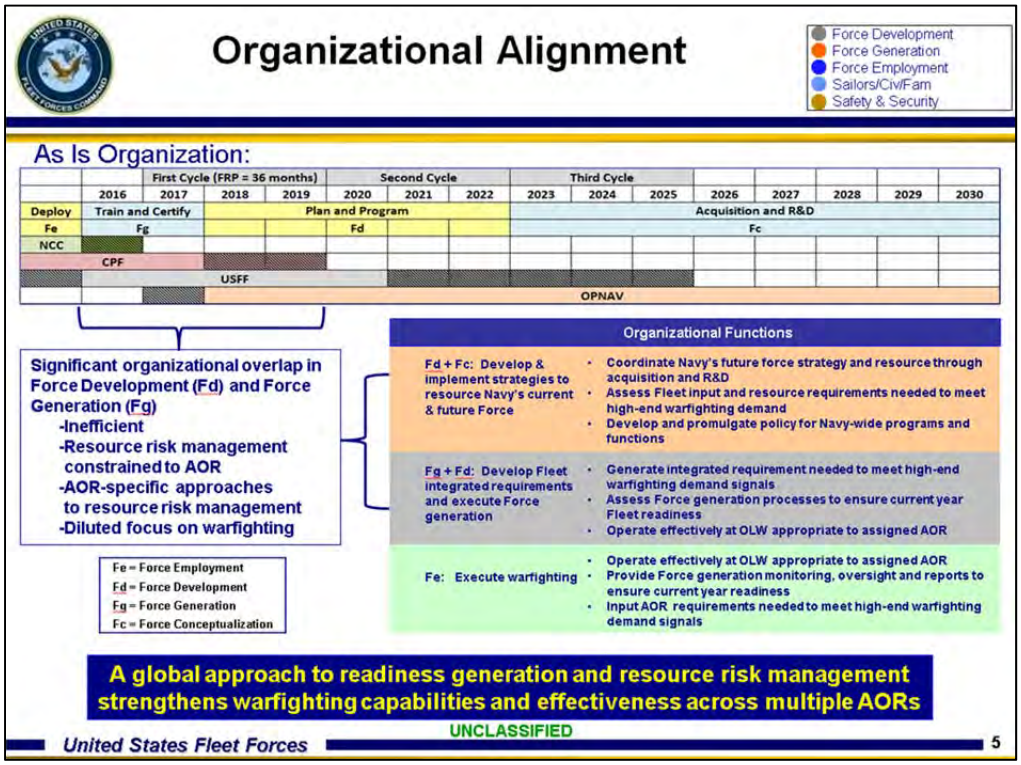
Figure 8. Phases of Force Readiness



Source: FFC briefing, "Enhance Naval Power at and from the Sea," August 16, 2016.

Figure 9 is a slide from an August 2016 FFC briefing showing how the four phases align and the organizations with responsibility for each phase. FFC notes in this presentation that there is significant overlap between FFC and PACFLT for the Fd and Fg phases, which it believes introduces inefficiencies and results in each Fleet performing risk management in different ways. FFC believes the consolidation of Fd and Fg under a single Fleet (FFC) would strengthen warfighting capabilities and improve effectiveness.

Figure 9. FFC slide on organizational alignment and readiness overlaps



Source: FFC briefing, "Enhance Naval Power at and from the Sea," August 16, 2016.

USN organizational structure

USN operating forces

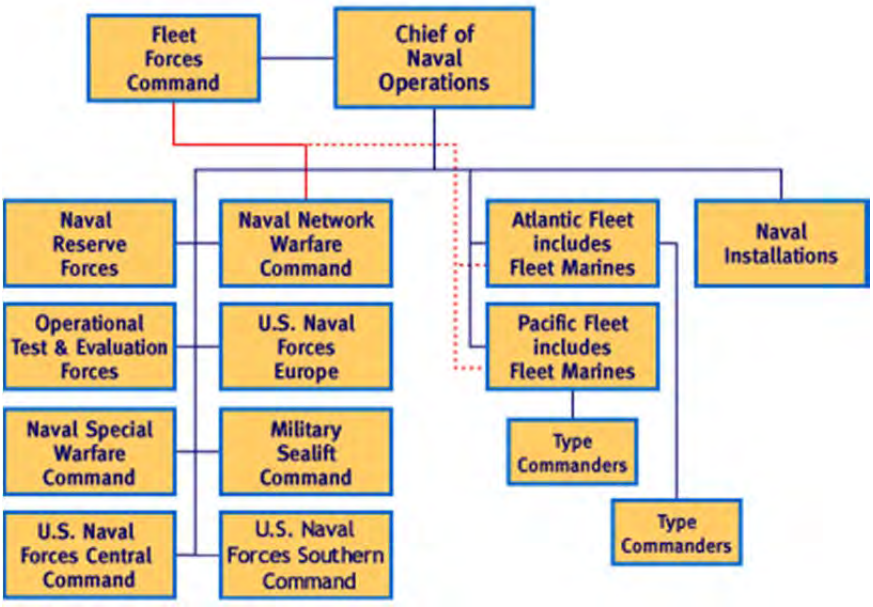
Figure 10 shows the organizational structure for U.S. Navy (USN) operating forces, with the CNO having overall responsibility for all operating forces. The dotted red line in Figure 10 depicts FFC command and control of PACFLT forces for inter-deployment training cycle (IDTC) purposes. The U.S. Navy website provides the following description of these relationships:

> The operating forces commanders and Fleet commanders have a dual chain of command. Administratively, they report to the Chief of Naval Operations and provide, train, and equip naval forces. Operationally, they provide naval forces and report to the appropriate Unified

> Combatant Commanders. Commander Fleet Forces Command commands and controls fleet assets on both the Atlantic and Pacific coasts for interdeployment training cycle purposes. As units of the Navy enter the area of responsibility for a particular Navy area commander, they are operationally assigned to the appropriate numbered fleet. All Navy units also have an administrative chain of command with the various ships reporting to the appropriate Type Commander.[5]

Administratively, both COMUSFLTFOR and COMPACFLT report directly to the CNO, and both have administrative control (ADCON)[6] of the Type Commands (TYCOMs) in their areas of responsibility (AORs).

Figure 10. U.S. Navy operating forces organization structure



Source: http://www.navy.mil/navydata/organization/orgopfor.asp (July 10, 2017).

[5] http://www.navy.mil/navydata/organization/orgopfor.asp

[6] Per Joint Publication 1, "ADCON is the direction or exercise of authority over subordinate or other organizations with respect to administration and support, including organization of Service forces, control of resources and equipment, personnel management, logistics, individual and unit training, readiness, mobilization, demobilization, discipline, and other matters not included in the operational missions of the subordinate or other organizations." [13]

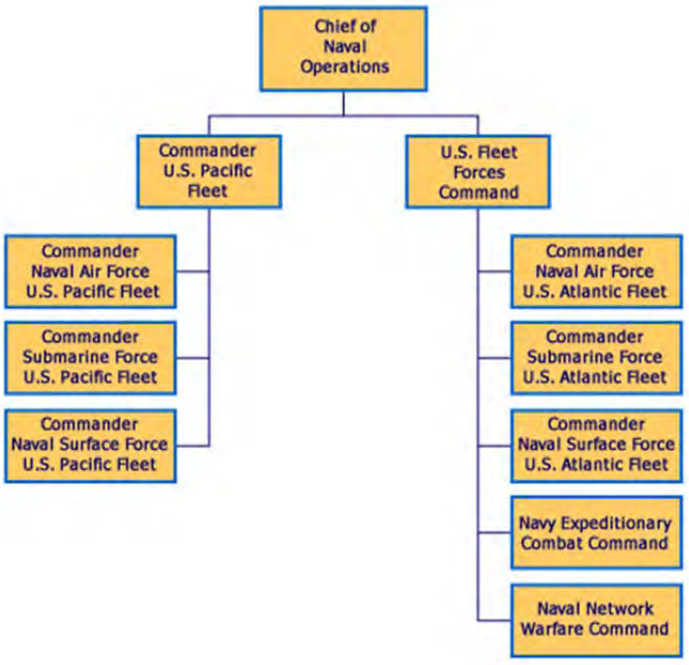
Type Commands

U.S. Navy Type Commands (TYCOMs) provide administration, staffing, and operational training functions for a specified "type" of weapon system (e.g., Air, Submarine, and Surface). Figure 11, from the Navy website, shows how the eight USN TYCOMs are currently aligned under either COMPACFLT or COMUSFLTFOR. The website also notes

> All ships are organized into categories by type. Aircraft carriers, aircraft squadrons, and air stations are under the administrative control of the appropriate Commander Naval Air Force. Submarines come under the Commander Submarine Force. All other ships fall under Commander Naval Surface Force. Also, you will note that the Atlantic and Pacific Fleets mirror one another. Normally, the type command controls the ship during its primary and intermediate training cycles and then it moves under the operational control of a fleet commander.

While both Fleets have Air, Submarine, and Surface TYCOMs, FFC has two additional TYCOMs—the Navy Expeditionary Combat Command (NECC) and the Naval Network Warfare Command (NAVNETWARCOM).

Figure 11. U.S. Navy Type Commands



Source: http://www.navy.mil/navydata/organization/tycoms.asp (July 10, 2017).

The Fleet Air, Surface, and Submarine TYCOMs are organized in a lead/follow construct, shown in Table 1.

Table 1. Current Lead/Follow TYCOM structure

Lead TYCOM	Follow TYCOM
Commander, Naval Air Force U.S Pacific Fleet, Dual hatted as Commander, Naval Air Forces	Commander, Naval Air Force U.S Atlantic Fleet
Commander, Naval Surface Force U.S Pacific Fleet, Dual hatted as Commander, Naval Surface Forces	Commander, Naval Surface Force U.S Atlantic Fleet
Commander, Naval Submarine Force U.S Atlantic Fleet, Dual hatted as Commander, Naval Submarine Forces	Commander, Naval Submarine Force U.S Pacific Fleet

Source: OPNAVINST 5540.77B [14], and OPNAVINST 5450.337B [15].

The Lead TYCOMs are dual-hatted as both the commander for their respective Fleet's TYCOM and the commander for all their type's forces. Specific responsibilities identified in the missions, functions, and tasks (MF&T) instructions for Commander, Naval Air Forces (COMNAVAIR), Commander, Naval Surface Forces (COMSURFOR), and Commander, Naval Submarine Forces (COMSUBFOR) include [14-15]

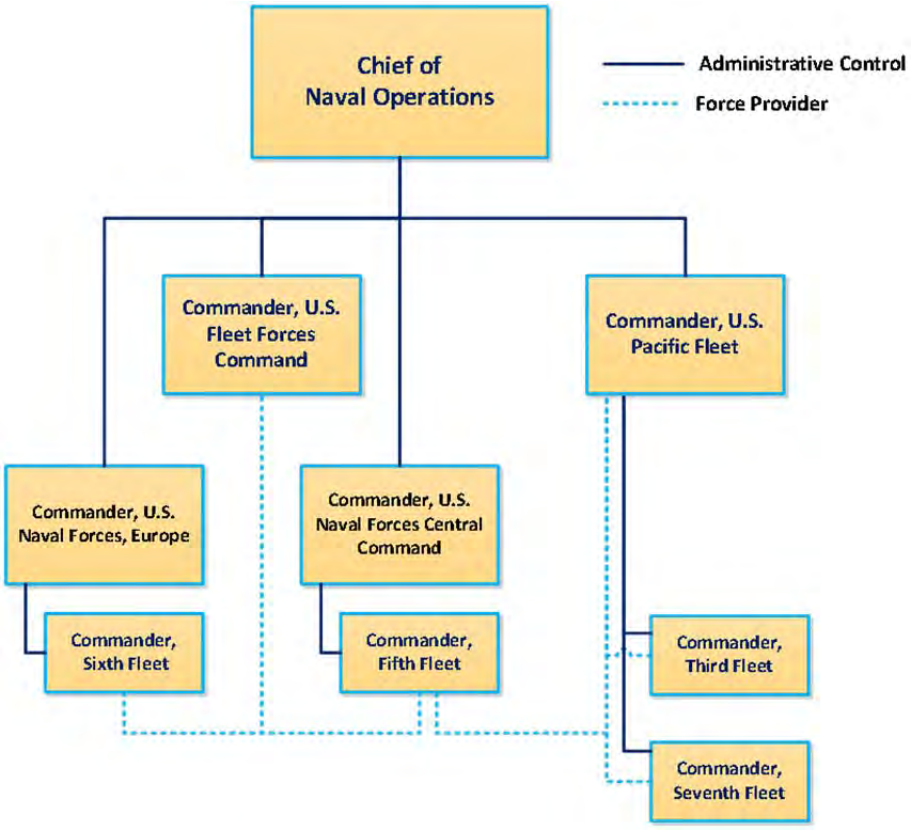
- Leading the development and coordination of force-wide assessments of current and future readiness to support COMPACFLT and COMUSFLTFORCOM
- Leading the development and coordination of force-wide plans, concepts, and policies to generate ready forces with force stakeholders to support COMPACFLT and COMUSFLTFORCOM
- Leading the development of force-wide readiness, warfighting, and personnel requirements with force stakeholders to support COMPACFLT and COMUSFLTFORCOM
- Serving as the primary advocate and unified voice for naval air forces, naval surface forces, and naval submarine forces, respectively, to echelon 3 and above commands, ensuring alignment and synchronization with COMPACFLT and COMUSFLTFORCOM
- Serving as the Navy's single process owner of the Naval Aviation Enterprise (NAE), Surface Warfare Enterprise (SWE), and Undersea Enterprise (USE), respectively.

The Navy's Numbered Fleets

As shown in Figure 10, Navy Component Commands (NCCs) are aligned administratively to the CNO. They are also operationally aligned with Combatant Commanders, through the Forces For Unified Command (Forces For) in the Secretary

of Defense's (SECDEF) Global Force Management Implementation Guidance (GFMIG). Figure 12 shows the relationships for the Navy's Numbered Fleets, which are aligned administratively to NCCs (solid lines), with forces provided by FFC or PACFLT (dotted lines). Forces are provided by each Fleet's TYCOMs.

Figure 12. U.S. Navy's Numbered Fleet alignment



Source: FFC briefing, "Enhance Naval Power at and from the Sea," August 16, 2016.

Readiness responsibilities and authorities

The MF&Ts for each Fleet are codified in separate OPNAV Instructions—OPNAVINST 5440.77B, *Missions, Functions, and Tasks of United States Fleet Forces Command* [14], and OPNAVINST 5450.337B, *Missions, Functions, and Tasks of Commander, United States Pacific Fleet* [15]. Additional responsibilities regarding Fleet readiness are included in OPNAVINST 4700.7L, *Maintenance Policy for United States Navy Ships*. A

matrix of these readiness responsibilities is shown in Appendix B: Fleet Commander Responsibilities and Authorities, but key responsibilities and authorities include

- Authority for organizing, manning, training, equipping, and maintaining Department of Navy (DON) forces, along with other key functions, is codified in Title 10 U.S. Code (10 U.S.C), section 5013, regarding the Secretary of the Navy. These authorities are delegated, through the CNO, to each Fleet commander in their Fleet's MF&T instruction.

- "CNO delegates to COMUSFLTFORCOM authority to generate and communicate Navy Global Force Management [GFM] solutions concerning general purpose forces and ad hoc forces retained by the Secretary of the Navy" [14]

    - COMPACFLT is to, "Support COMUSFLTFORCOM in the execution of Navy global sourcing solutions as the Navy global force manager in response to combatant commander requests for general purpose forces, ad hoc forces, and individual augmentees" [15]

- COMUSFLTFORCOM is the Budget Submitting Office (BSO) with financial management authority and responsibility under reference (d) [SECNAVINST 7000.27A] for assigned fleet operating forces, shore activities, military and civilian personnel, fleet training, infrastructure, and budget [14]

- COMPACFLT is the budget submitting office (BSO) with financial management authority and responsibility under reference (f) [SECNAVINST 7000.27B] for assigned forces, shore activities, military and civilian personnel, budget, fleet training range sustainment, and environmental planning

- COMUSFLTFORCOM is tasked, "In consultation with COMPACFLT, [to] be the unified voice for fleet training requirements and policies to generate combat ready Navy forces per the Fleet Response Plan (FRP) [now Optimized FRP (OFRP)]" [14]

- COMUSFLTFORCOM is tasked to, "Integrate readiness resource metrics for personnel, equipment, supply, training, and ordnance to provide a comprehensive means of assessing capabilities-based operations" [14]

- In OPNAVINST 4700.7L, CNO directs that COMUSFLTFORCOM "has primary responsibility for identifying, consolidating, and prioritizing fleet maintenance and modernization requirements in conjunction with Commander, Pacific Fleet (COMPACFLT) and the warfare enterprises with support from the lead technical authority, COMNAVSEASYSCOM, which

establishes the technical requirements. COMUSFLTFORCOM will serve as the lead for collection and consolidation of resource requirements, and act as the single fleet voice and point of submission of resource requirements to CNO (N4)" [16].

These responsibilities can be organized into two distinct categories:

1. Those where FFC has overall responsibility, supported by PACFLT and others
    - Authority to generate and communicate Navy Global Force Management [GFM] solutions
    - Unified voice for fleet training requirements and policies to generate combat-ready Navy forces
    - Integration of readiness resource metrics for personnel, equipment, supply, training, and ordnance
    - Primary responsibility for identifying, consolidating, and prioritizing fleet maintenance and modernization requirements
2. Those where responsibilities that are identical for FFC and PACFLT, for their assigned forces
    - Authority for organizing, manning, training, equipping, and maintaining DON forces
    - BSO with financial management authority and for assigned forces, shore activities, military and civilian personnel, budget, fleet training range sustainment, and environmental planning.

Under a Single Readiness Integrator Framework, forces assigned to each Fleet would need to be clearly identified. In addition, PACFLT would have approximately 10 percent of its current OMN budget to support all remaining OMN requirements within its BSO.

Factors That Matter for Reorganizations

If Fleet readiness funding is consolidated under a single BSO, a reorganization would be necessary. Regardless of what this new structure may look like, there are some factors that must be considered in any possible reorganization, which could also affect the ability of the Fleets to deliver readiness. Most of these factors center on the decision-making authority of the top commanders, and how that authority would be affected by particular organizational models and other exogenous factors, such as face-to-face interactions, geographical distance, and time separation.

In our meetings, the CNA study team heard two positions regarding how consolidation would affect the quality and timeliness of readiness decisions. The first was that having a centralized command structure would allow for decisions that were more efficient and effective in terms of a single, smaller staff coordinating issues and a single decision authority ensuring consistency across the Fleet, which they believe will also make for faster decisions. The second was that consolidation would increase FFC's span of control—both in personnel and in geography (over 14 time zones)—which would result in some degree of delay and poorer quality of decisions, since decision makers would be more geographically removed from the issue at hand. In this section, we examine these arguments to understand the types of impacts that issues such as organizational structure and geographic proximity can have on the quality of decision making, as well as the timing of the decisions.

A note on reorganization

An article in the June 2010 issue of *Harvard Business Review* references a Bain & Company study of 57 reorganizations between 2000 and 2006 that found that "fewer than one-third produced any meaningful improvement in performance. Most had no effect, and some actually destroyed value" [17-18]. The article notes that this is due largely to the fact that there is a misunderstanding about the relationship between structure and performance. Ultimately, performance is not solely determined by the amount of and access to resources; rather, it depends on the quality of decision making of its managers and their ability to execute the decisions. Thus an organizational structure will improve decision making only in so far as it improves

executives' ability to make decisions faster and better [17]. Most reorganizations are created doing a strengths, weaknesses, opportunities, and threats (SWOT) analysis, but if the goal of a reorganization is to improve performance, it might need to be based on an examination of the critical decisions that need to be made in an organization, and then choosing the organizational location/conditions that would best enable the decisions to be made. But choosing the right location within an organization to control the decisions can also be affected by other exogenous variables. For the purposes of this paper, we will focus on three: consolidation, unity of command, and span of control.

Consolidation

Combining funds under a single BSO to manage the readiness accounts is a form of consolidation. While the literature on consolidation is vast, there are two important takeaways that are relevant to the Navy: lack of competition and fragmentation.

The potential benefit of consolidation is that "profit," or performance, could be raised significantly. This is because costs might be reduced, revenues may be increased, and there may be greater economies of scale, all allowing for a more profitable firm [18]. However, the potential downside of consolidation is that the absence of competition could allow organizations to grow complacent and fail to innovate. Consolidated organizations typically become more static and entrenched [19]. Too much competition, on the other hand, is not good either. The markets could become less stable, resulting in organizations fragmenting. In this situation, organizations would not be as profitable, since they would fail to benefit from things like economies of scale. But competition fundamentally works to create innovation within and between organizations in order to perform better—whether the goal is more profits or greater readiness. Consolidation has benefits, but only to a point—too much consolidation means lack of growth. At the same time, too much competition could also have the same result. The key is to ensure a healthy balance.

Unity of command

Currently, PACFLT and FFC have two different approaches to funding distribution. PACFLT has a decentralized approach, while FFC is centralized. The reasons for these differences are varied. Given PACFLT's oversight of a large number of commands with differing functions that are geographically distant—with its smaller HQ staff—it has delegated many readiness decisions, and the associated funding authority, to the TYCOMs. It has also done this, in part, because the TYCOMs are more likely familiar with the state of readiness of their respective assets and are better informed to make decisions or recommend choices with regard to what should be funded. FFC, on the

other hand, uses a more centralized model in which most readiness decisions, including those relating to funding, are made at the headquarters level, partly due to the larger support staff, and partly due to FFC's not having direct Fe responsibilities and a more overarching role in supporting GFM requirements versus dealing with the threats and issues within one specific area of responsibility (AOR). So what are the implications of a centralized versus decentralized organizational structure?

Centralization is the degree to which the right to make decisions and evaluate activities is concentrated, usually at the management level. A high level of centralization is the most straightforward way to coordinate an organization's decision making. But by concentrating all decisions in a relatively small group of managers, it places a significant cognitive demand on them, since they will need to learn and retain a great deal of information to make the best informed decisions. As organizations grow larger, that cognitive burden increases. This leads to a negative relationship between an organization's size and its degree of centralization. The larger an organization, the less centralized it should be [20].

How centralization affects decision makers

The small group of decision makers may be less innovative or respond less to external stimuli of problems and opportunities. However, since the goals for the small group of managers are likely similar and shared, it is possible for this group of decision makers to be proactive in making decisions they feel support their readiness goals. Likewise, this small group will make very conscious choices based on all of the knowledge available—as opposed to the prospect of being unaware of decisions that are made by another organization in a decentralized model.

Yet decentralization also has important benefits—namely, it relieves the manager of having to gather and retain a great deal of information, and thus cuts down on communication costs, such as emails, phone calls, and meetings with superiors to gain permission to make a decision. If the person with the most expertise on a particular subject is making a decision on that subject, then they might not need to communicate with peers or subordinates as well. It is also likely that the quality of the decision will be improved, since it was made with expertise [21]. The downside to this approach is that the principal may lose control of the decisions, which in any case may not align exactly to the commander's preferences and goals.

Numerous analyses have shown that except for extreme cases (such as being a very small business), a centralized decision-making structure tends to be less preferred, as the manager has to monitor a larger flow of decisions [20, 22-23]. If decisions cannot be monitored as they are made, then a more centralized approach may be necessary. In very large organizations such as PACFLT and FFC, this likely will increase the degree of hierarchy due to span of control issues.

Span of control

We will discuss three variations of span of control that are relevant to any proposed plan to consolidate readiness funding and ADCON of the TYCOMs: direct reports, geographic boundaries, and time boundaries.

Direct reports

The traditional meaning of span of control is the number of subordinates that report to a manager—the greater the number of subordinates, the greater the span of control. Too great a span of control is associated with a loss in the performance of the organization, since even the best managers can be overwhelmed if they have too many subordinates. They could spend all of their time managing people and not enough time on long-range planning or policy implementation.[7] Too small a span of control means that an organization is likely to be top-heavy with too many managers, and those managers will be too involved in their subordinates' work. Span of control can be wider if the work is routinized, but if there is a variety of tasks to perform that are complex, then a narrower span of control would allow the manager to strike the right balance between managing people and oversight of the work itself.

Based on their MF&T, there are a large number of subordinate command relationships for both COMUSFLTFORCOM (18) and COMPACFLT (14). If we extrapolate the number of direct reports based on the number of organizations and staff overseen, then each of the Fleets has a very wide span of control. Combining the TYCOMs under FFC, in the case of consolidation (understanding that some duplication will be eliminated), and including the direct reports from the Fleet Maritime Headquarters (MHQs) and Maritime Operations Centers (MOCs), would seem to result in a span of control that would be extremely challenging for any one commander and his organization to manage effectively.

In addition, given the variety of subordinate commands (as well as the sheer number of them), we would expect some organizational changes in how they would be managed. Normally, this change would be to increase the number of hierarchical levels; however, there is a limit to the utility of hierarchy before the hierarchy itself becomes burdensome [20].

[7] Sir Ian Hamilton, a British general, came up with a rule of thumb based on his military experience, which is still followed to this day: No one should manage fewer than three people or more than six [24: p. 39].

In addition to the number of subordinates, there are other ways span of control can be widened. In recent years, span of control has evolved to include not just the number of subordinates but also temporal and geographic distances due to the growth of virtual teams that can typically cross national and time-zone boundaries.

Geographic and temporal boundaries

If readiness funding were realigned under a single BSO, and ADCON of the TYCOMs were realigned, there would be a much-increased span of control for FFC—and not just in the number of personnel that would be reporting to FFC, but also in terms of geographic and temporal distance, since the span of control would be from Diego Garcia to Norfolk—14 time zones, to be exact. So what do these increased boundaries mean for effectiveness?

Geographic boundaries have been associated with effects on team efforts. Significant geographic separation among team members has been associated with "lower efficiency in completing tasks, less trust among team members, and impairment of negotiation tasks" [25]. While there are some benefits to geographic separation (greater innovation, for instance), these benefits might not outweigh the lower performance of geographically distant teams.

The boundary effect of time is also important, especially in terms of shared working hours. As shared working hours decrease, issues such as communication and coordination suffer. Studies have shown that even small time differences can have substantial influence [25]. When the working-hours overlap is reduced, coordination challenges grow rapidly, in large part because the volume of communication between teams is greatly reduced—as well as the quality of the communication because of choices that team members will make about communication:

- They may choose to communicate asynchronously through less-rich media (e-mail) and wait for a reply
- They may wait to communicate until working hours overlap
- They may choose not to communicate at all and take independent action.

If work tasks are routinized, certain, and well organized in terms of timing (such as customer service support), then the time separation may not be as significant, because coordination will be more mechanistic [26]. But for tasks that are non-routine, uncertain, and rely heavily on inputs from other team members (because of permission required or collaboration), then time separation can be quite detrimental, because the nature of the task will require organic coordination. Organic coordination means coordination that takes place on an ad hoc basis and has a high number of dependencies (the need for workers to communicate frequently and rely

on the outputs of each other's work) [26]. Organic coordination is especially reliant on frequent and high-quality communication. Thus tasks that require organic coordination will suffer because of temporal separation, due to the impact on the amount and quality of communication.

Face-to-face interaction

A critical issue that is key to good decision making is the influence of face-to-face communication, especially in cases where the span of control for distance and time is great. In general, organizational research has found that members of face-to-face teams are "more satisfied, supportive, and provide innovative solutions due to self-actualizing and constructive style" [11]. On the other hand, virtual teams are more prone to conflict, less satisfied, and have poor decision-making ability due to a "more passive and aggressive" [11] style.[8] There are a number of possible causes for these outcomes, but essentially the key factor determining the success or failure of teams is trust [28]. And trust tends to be generated over time with successful interactions between team members that are enabled by using "rich media" to communicate, such as face-to-face interactions.

Research has found that in organizations that must use "virtual teams," face-to-face meetings increase team performance and improve customer satisfaction with those teams. In other words, performance and customer satisfaction increase when teams are not completely virtual, but have some form of routinized face-to-face interaction [12]. The reasons for this are manifold, but they all center on the lack of extrinsic motivation for virtual teams, such as leadership recognition, evaluations, awards, and feedback from important stakeholders, as well as a lack of trust among team members. Moreover, virtual teams' performance can suffer because of vulnerability to process losses and performance problems. Yet these issues can be obviated by more frequent face-to-face interactions. Geographic distances are a great impediment to face-to-face interaction—if such distances exist, then managers will need to work hard to find some substitutes to face-to-face interactions such as video teleconferencing.

[8] However, some studies show that virtual teams may take longer to make decisions, but when they do they are higher-quality decisions [27].

Table 2. Impacts of various factors on decision making

Factors	Pros	Cons
More centralization	• Shared goals among decision makers • Conscious choice on decisions	• More insular and less responsive to external stimuli • Must increase hierarchy in order to control decisions
More decentralization	• More innovative • Decisions based on expert knowledge • Organization less hierarchical	• Decisions may be made without leadership awareness
Increased direct reporting	• Can manage but must have more hierarchical layers	• Too many direct reports overwhelm supervisors • Supervisors no longer spend time on planning or innovating
More geographic distance	• Teams tend to be more innovative because team makeup is heterogeneous	• Less trust • Less efficient • Less negotiating power
Larger amounts of time separation	• May not matter if there are routinized tasks	• Coordination reduced • Communication very difficult, especially as shared working hours decline
Less face-to-face interaction	• Could make better decisions	• Loss of trust • More prone to conflict • Slower decisions

Conclusion

In this section, we have discussed the implications of consolidation, and identified potential benefits and costs associated with particular organizational structures for collaboration. We lay out the pros and cons of each factor above in Table 2. While

consolidation could be positive by standardizing performance, lowering costs, or increasing economies of scale, it could also have the negative effects of stifling innovation and increasing span of control beyond a reasonable level. With consolidation comes the decision about where in the organization decisions should be made—at a central location (normally upper management), or closer to the execution agents in a decentralized manner. Each approach has benefits and costs, but when combined with a large consolidation, it would be harder to keep a centralized command structure: The burden on the commander of the multitude of decisions and the information the commander would need to make those decisions could be overwhelming, thereby making for a less effective command.

Moreover, consolidation, especially where ADCON is transferred, would have a large effect on span of control issues. Not only would the number of direct reports increase, but those direct reports also would be spread across great distances and time zones. The only possible way to handle that dramatic an increase in direct reports would be to add multiple levels of hierarchy so that each manager would have fewer direct reports. This would mean a very top-heavy organization, and, given the guidance from Congress to reduce management headquarters staffing and eliminate flag billets, this may not be a viable path. Moreover, since those direct reports will have to work as "virtual teams," there may be a loss in performance due to the lack of shared working hours and due to geographic impediments to having some face-to-face communications with other members of the team or supervisors of the team.

While many of these challenges could be mitigated with the right decisions and organizational structure, consolidation presents significant challenges. Not consolidating also has potential downsides—efficiencies will require more effort and economies of scale may not be possible. Most of all, though, not consolidating would avoid an organizational restructuring that would be incredibly challenging for any manager, particularly when its possible benefit to readiness is unknown.

Fleet Readiness Funding

One argument for integration is more efficient execution of funds and flexibility to reallocate funds. Another argument is eliminating variation in standards for Fleet material condition. In this section, we assess the basis for these arguments using data on the OMN accounts and Fleet health metrics for the two Fleets.

As mentioned in the "Background" section, five OMN readiness accounts, which are OMN sub-activity groups (SAGs), were identified for review: 1A1A, 1A2A, 1A5A, 1B1B, and 1B4B.

All funding in the Navy is distributed to, and executed by, BSOs. For the purposes of this study, we will look primarily at BSO 60 (COMFFC), BSO 70 (COMPACFLT), BSO 19 (Commander, Naval Air Systems Command (COMNAVAIR)), BSO 24 (Commander, Naval Sea Systems Command (COMNAVSEA)), and BSO 27 (Commander, Navy Reserve Forces Command (CNRFC)).

The one unique account is SAG 1A5A, Aircraft Depot Maintenance, where all funding is in BSO 19 (COMNAVAIR). Both FFC and PACFLT stated that it would be best for this funding, which is overseen by the Naval Aviation Enterprise (NAE), to remain under COMNAVAIR and not be consolidated into a Fleet BSO account. For this reason, we will focus on the remaining four SAGs, which are primarily funded through BSO 60 and BSO 70.

Readiness funding by BSO

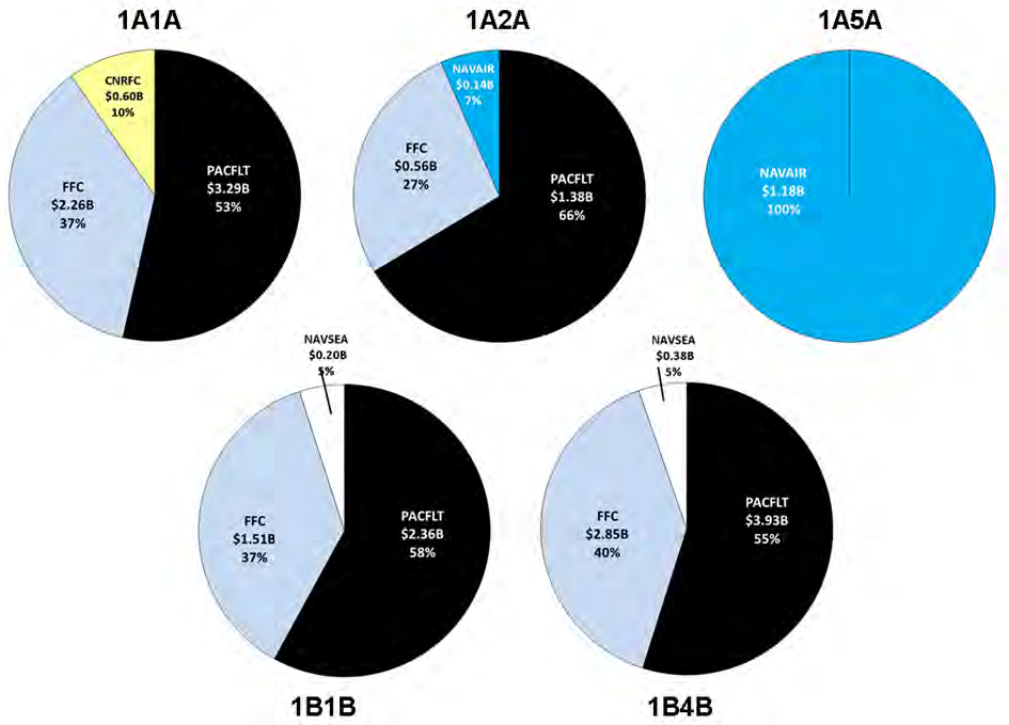
In the next series of figures, we provide comparisons of Navy readiness funds by BSO, with particular attention on BSO 60 and BSO 70. These figures show the relative distribution of funds between the BSOs, as well as the historical and projected distribution between base funding in the DOD or Omnibus Appropriation Acts and the supplemental funding acts, which provide overseas contingency operations (OCO) funds.

Our intent is to illustrate the percentage of all Fleet OMN that is represented by these readiness funds, and the proportions in each Fleet, as well as to highlight that funding for the Fg and Fe readiness missions are comingled in these accounts. Thus consolidation would result in all Fg and Fe funding being combined under the Single Readiness Integrator Framework.

Figure 13 shows the percentage of each readiness funding SAG, by BSO, in FY 2018. With the exception of SAG 1A5A (Aircraft Maintenance), which is completely funded through NAVAIR, the two Fleet BSOs account for 90 to 95 percent of the funding in the other four readiness accounts. The one BSO not mentioned previously is BSO 72, Commander of Navy Reserve Force Command (CNRFC), which receives 1A1A funding.

As shown in Figure 13, more than 50 percent of the funds in each of the four Fleet readiness accounts is currently in the PACFLT BSO.

Figure 13. U.S. Navy Readiness funding in FY 2018, by SAG and BSO



Source: Program Budget Information System (PBIS), PB18 database.

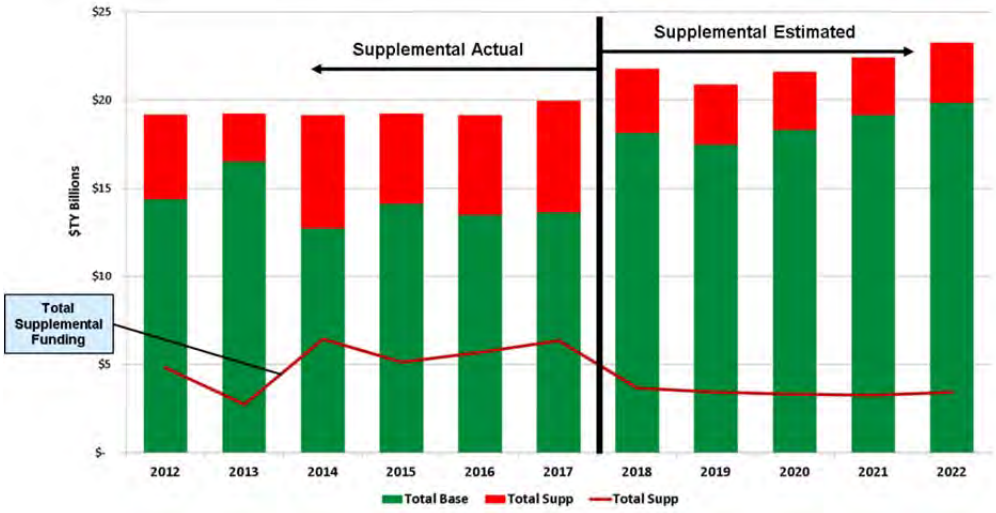
Readiness account base versus supplemental funding

Since the introduction of the Global War on Terror (GWOT) supplemental appropriation, which funded the costs of war in Iraq and Afghanistan, DOD has received funding each year in both a standard appropriations act and in a supplemental appropriation. Over time, the term GWOT was replaced with OCO, but the supplemental appropriation bill has become a key factor in the Navy's annual programming and budgeting process. In Figure 14, we show the funding distribution

of base to supplemental funding for the four Fleet readiness accounts. Values in FY 2017 and before reflect the actual appropriations, as adjusted in execution, while the values from FY 2018 to FY 2022 are the values from the President's Budget for FY 2018 (PB18) submission.

Total supplemental funding for each FY is shown in two ways in Figure 14—first, as the red section at the top of each FY bar, and also as a red line, to permit an easier comparison by year. The figure shows supplemental funds were lowest in FY 2013, but have been at a level of at least $5 billion since FY 2014.

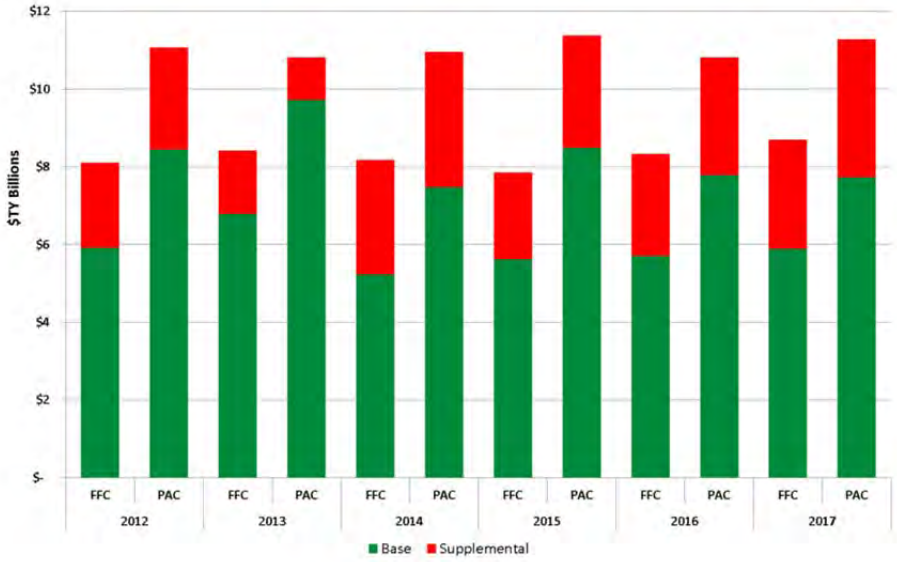
Figure 14. Base and supplemental funding for four readiness accounts



Source: PBIS and OPNAV N83–provided data.

Figure 15 shows the level of these base and supplemental funds from FY 2012 to FY 2017, by Fleet, with supplemental funds in PACFLT being slightly higher than in FFC.

Figure 15. Base and supplemental funding for four readiness accounts, by Fleet



Source: PBIS and OPNAV N83–provided data.

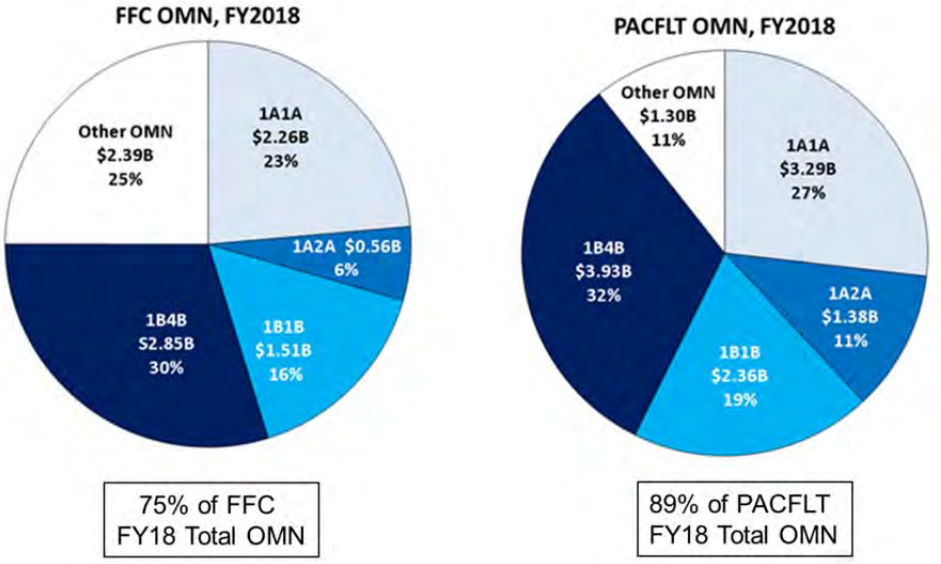
Readiness account funding as proportion of total Fleet OMN

To provide additional context, we now look at the percentage of each Fleet's total OMN funding that is represented by the readiness accounts. In the next three figures, we show these relationships for each Fleet.

In Figure 16, we show the OMN base funding levels contained in the FY 2018 President's Budget (PB18), broken out by each of the Fleet's readiness accounts and all other Fleet OMN funding. Key differences between the two Fleets' OMN funding are in two main areas: SAG 1A2A (Fleet Air Training) and Other OMN. The higher funding in PACFLT for SAG 1A2A is due to all funding for the Commander, Naval Air Training (CNATRA) and the majority of Fleet Replacement Squadrons (FRSs) being under PACFLT.

In Other OMN, FFC has approximately $1 billion more non-readiness account funding, driven primarily by higher funding in SAGs 1C1C (Combat Communications and Electronic Warfare)—$494 million more; 1C5C (Operational Meteorology & Oceanography)—$327 million more; 1C6C (Combat Support Forces)—$269 million more; and 1CCY (Cyberspace Activities)—$222 million more. Alternatively, PACFLT has $372 million more funding in SAG 2A1F (Ship Prepositioning and Surge).

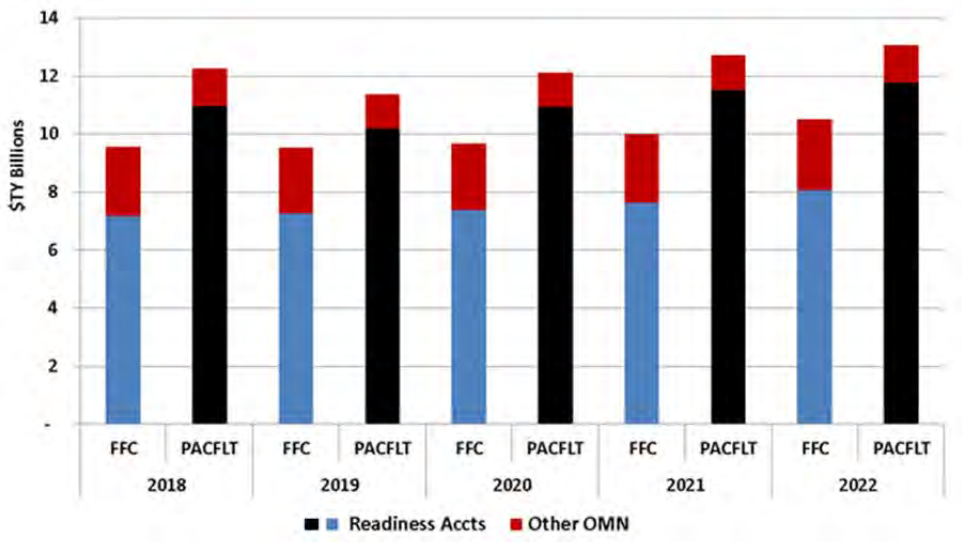
Figure 16. Fleet readiness account versus Other OMN funding for FY 2018



Source: PBIS, PB18 data file.

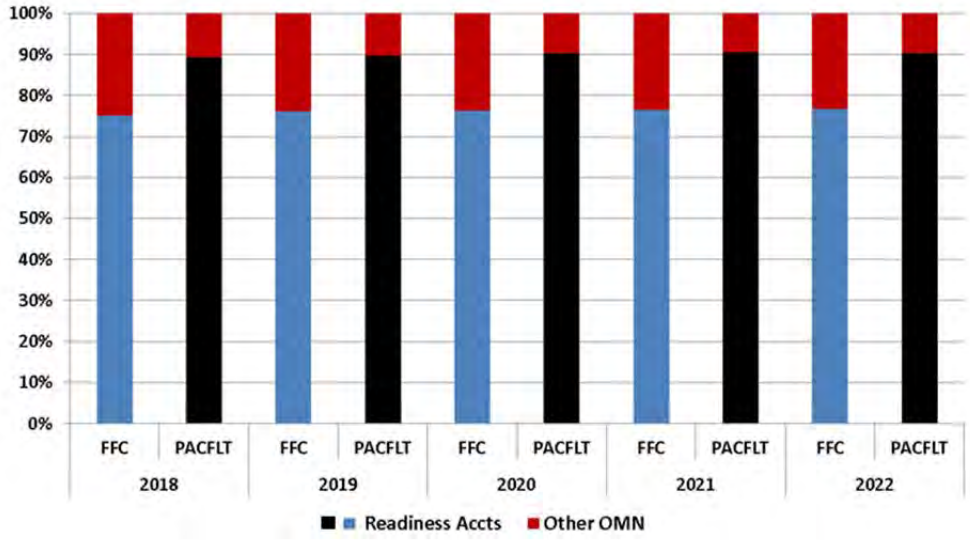
In Figure 17, we show OMN funding levels, by readiness account versus other OMN, by Fleet and FY, across the PB18 Future Years Defense Program (FYDP). Figure 18 shows this same information as a percentage of each Fleet's total OMN funding.

Figure 17. Comparison of four readiness accounts to Total OMN for both Fleets



Source: PBIS, PB18 data file.

Figure 18. Comparison of four readiness accounts to Total OMN to 100 percent



Source: PBIS, PB18 data file.

Funding levels are consistent across the FYDP, with readiness account funding representing 76 percent of all FFC base OMN funding across the FYDP, and 90 percent of all PACFLT base OMN funding for this same period.

Obligations and expenditures

OMN obligations (obs) and expenditures (exp) provide insight into how an organization is managing its OMN funding. All DOD Operations and Maintenance (O&M) funding is known as "one-year" funding, given that all O&M funds must be obligated (put on contract) within the first fiscal year (FY). The Office of the Secretary of Defense Comptroller (OSD(C)) has set goals for each military service and component to have 100 percent of its O&M funding obligated within the first fiscal year; 75 percent of an FY's O&M funding expended (paid out) within the first FY; and 100 percent of each FY's O&M funding expended by the end of the second year of availability. O&M funding, however, remains available to expend against obligations made in the first FY (to include later obligation adjustments) through the sixth FY of availability. We review these rates to determine if one Fleet is performing better in terms of obs and exp rates, where we would hope to see consistent rates across the FY achieving the OSD(C) goals. As an example, we will describe the different periods associated with FY 2017 O&M funds [29].

- **Current Period:** Throughout FY 2017, these funds are available for new obligations, obligation adjustments, and expenditures

- **Expired Period:** FY 2017 O&M funds remain available through FY 2022 for obligation adjustments and expenditures, but no new obligations
    - OSD's goal is to have 100 percent of FY 2017 O&M funds expended by the end of FY 2018, but they remain legally available for expenditure through the end of FY 2022 for any obligations made in FY 2017
        - If a military service repeatedly has a large percentage of funds expending after the end of the second FY of availability (FY 2018 in our example) without a valid reason, OSD would look to limit some future funding as being requested ahead of need
- **Canceled Period:** On October 1, 2022, the start of FY 2023, FY 2017 O&M funds are unavailable for obligations, obligation adjustments, or expenditures

We look at the two Fleets' obligation and expenditure rates with respect to the OSD goals, we gain insight into whether there are differences in each Fleet's funding execution, which might change if readiness funding were consolidated under a single BSO. For instance, does one Fleet have a significantly higher percentage of funds that transition into the next fiscal year, which might indicate that O&M funding is in excess of requirements?

Obligations

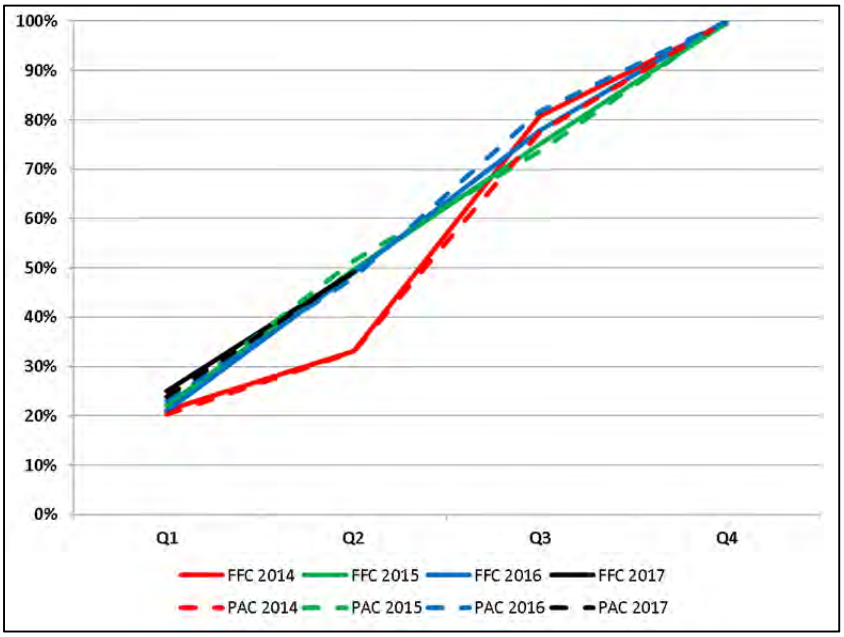
We first look at obligations. Obligation rates provide insight into both how accurately an organization projects its future requirements and its efficiency in placing these funds on contract. Because O&M is available for obligation only in the first FY it is provided, this is the most stressing of the OMN funding constraints.

We review the four FFC- and PACFLT-managed readiness accounts (SAGs 1A1A, 1A2A, 1B1B, and 1B4B), based on data provided by OPNAV N82/FMB, and find that obligation rates are exceptionally similar for both Fleets, by FY. As an example, Figure 19 shows obligation rates by quarter for SAG 1A1A. Similar charts for all SAGs are shown in Appendix C, Figures 50 to 53.

For all of the obligation and expenditure charts, we plot the rates for each FY from FY 2014 to FY 2017, by quarter, with each FY depicted by a different color. FFC rates are shown as solid lines, and PACFLT rates are shown as dashed lines (in the same color for each FY).

As shown in Figure 19, quarterly obligation rates are very consistent between the two Fleets—and across FYDPs. The one exception is both Fleets obligating at a lower rate in the second quarter of FY 2014, which we understand was influenced primarily by the implementation of the Budget Control Act (BCA, or "sequestration") limitations in FY 2013.

Figure 19. 1A1A, Flying Hours Program (FHP), obligations comparison



Source: OPNAV N82/FMB data.

This lower-than-average obligation rate in Q2 of 2014 is also seen for SAGs 1A2A (Figure 51) and 1B4B (Figure 53).

The one account where obligations are not as closely aligned is SAG 1B1B in FY 2014, (Figure 52), where PACFLT obligations lagged between Q1 and Q2 (similar to SAGs 1A1A, 1A2A, and 1B4B), but FFC obligations did not. SAG 1B1B obligations in Q2 were also higher in FY 2015 and FY 2016 than in FY 2014 and FY 2017, but these higher rates are consistent across both Fleets.

Based on these obligation trends, and this overall parallel relationship, we would not expect consolidation to either improve or degrade the alignment of funds obligations across the Fleets.

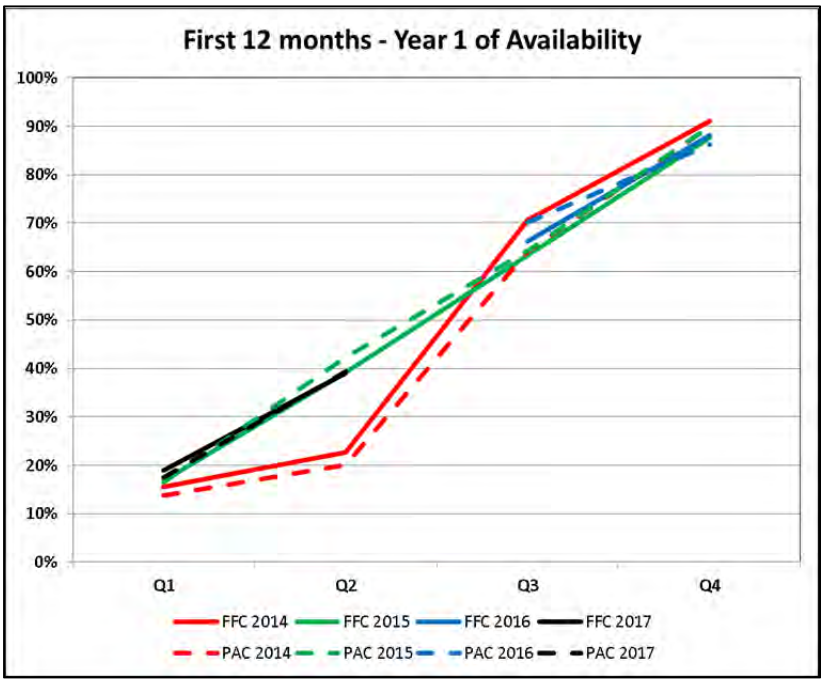
Expenditures—in first year and second year

As described previously, O&M funds remain available for expenditure for six years (as long as they were obligated in the first year of availability), but OSD goals are for 75 percent of these funds to be expended within the first FY, and 100 percent to be obligated by the end of the second FY. We review expenditure rates, by Fleet, for the same four readiness accounts. We provide two graphs for each SAG, one for the first FY of availability (e.g., FY 2014 funds expended in FY 2014), and one for funds expended in the second FY of availability (e.g., FY 2014 funds expended in FY 2015).

Colors for each FY are the same as used for obligations. Expenditure data were not available for Q1 and Q2 of FY 2016, so data are not shown for these quarters for either first-year FY 2016 expenditures or second-year FY 2015 expenditures.

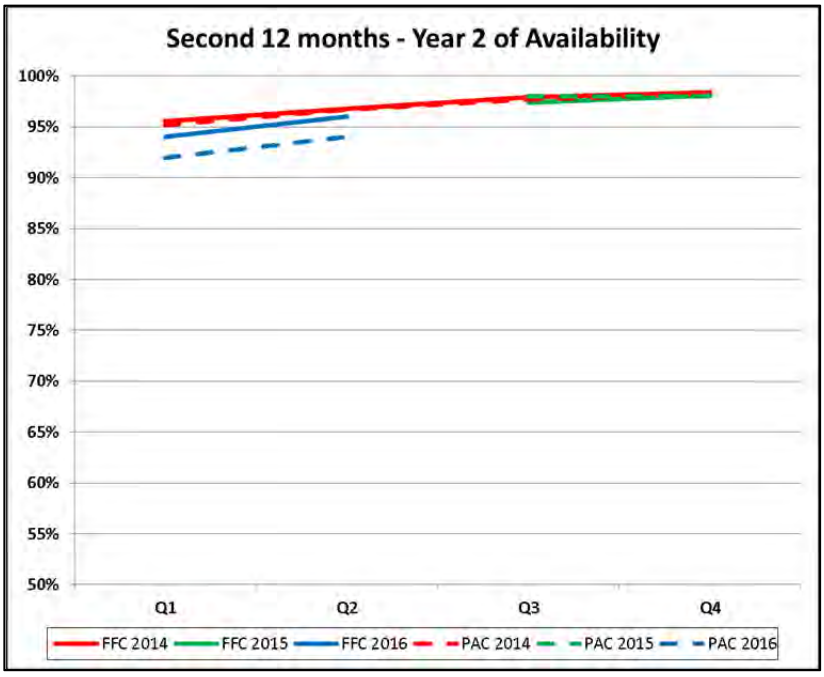
Figures 20 and 21 show SAG 1A1A expenditures in the first two years of availability—where the OSD goal is to have 100 percent of the funds expended. We see first-year expenditures for FY 2014 funds (Figure 20) having the same lower values in Q2 that we observed for obligations for this SAG in Figure 19. Second-year obligations (Figure 21) are also fairly consistent, though PACFLT FY 2015 expenditures are slightly lower than average. Both FFC and PACFLT have averages of 98 percent of all 1A1A funds being expended by the end of the second year.

Figure 20. 1A1A, FHP, first-year expenditures comparison



Source: OPNAV N82/FMB data.

Figure 21. 1A1A, FHP, second-year expenditures comparison



Source: OPNAV N82/FMB.

Graphs for the remaining SAGs are included in Appendix D, Figures 54 to 57. These figures show that expenditure trends are effectively the same for both Fleets, by FY. Thus we would not expect consolidation to either improve or degrade the alignment of funds expenditures across the Fleets.

Readiness account funds transfers

One of the proposed advantages of consolidating SAGs into a single BSO is that the single BSO could then realign funds between BSO 60 and BSO 70 without having to request a below threshold reprogramming (BTR) action through the Office of the Deputy Assistant Secretary of the Navy for Budget (FMB).

With respect to transferring funds between SAGs, strict limits were described in the *Explanatory Statement Submitted by Mr. Frelinghuysen, Chairman of the House Committee on Appropriations Regarding H.R.*, which provides additional details on the House Report (H.R.) 114-577 and Senate Report (S.R.) 114-263, the House and Senate versions of the Department of Defense Appropriations Bills, respectively. The explanatory statement places the following restrictions:

> The Committee directs the Secretary of Defense to use the normal prior approval reprogramming procedures to transfer funds in the Services' operation and maintenance accounts between O–1 budget activities in excess of $15,000,000. In addition, the Secretary of Defense should follow prior approval reprogramming procedures for transfers in excess of $15,000,000 out of the following budget sub-activities:
>
> *Navy:*
>
> Mission and other flight operations [SAG 1A1A]
>
> Aircraft depot maintenance [SAG 1A5A]
>
> Mission and other ship operations [SAG 1B1B]
>
> Ship depot maintenance [SAG 1B4B]
>
> Facilities sustainment, restoration, and modernization.

This language restricts the movement of funding out of SAGs 1A1A, 1A5A, 1B1B, and 1B4B, requiring an above-threshold reprogramming (ATR) request to Congress for any amount above $15 million for the Navy (in aggregate), regardless of whether funds are in a single or multiple BSOs. Given that the $15 million limit represents from 0.2 percent (1A1A and 1B1B) to 1.3 percent (1A5A) of the total Navy SAG funding in PB18, this essentially eliminates the ability to transfer funding out of these accounts without congressional notification and approval through the ATR process.

Fleet Readiness account funding adjustments

As discussed in the previous section, one potential benefit of consolidation is the ability to realign funds more easily, and with one set of priorities, during the first FY. The current BSO architecture incentivizes each Fleet to maximize readiness within its available funds, and it is possible that this could result in inefficiencies in either of two ways:

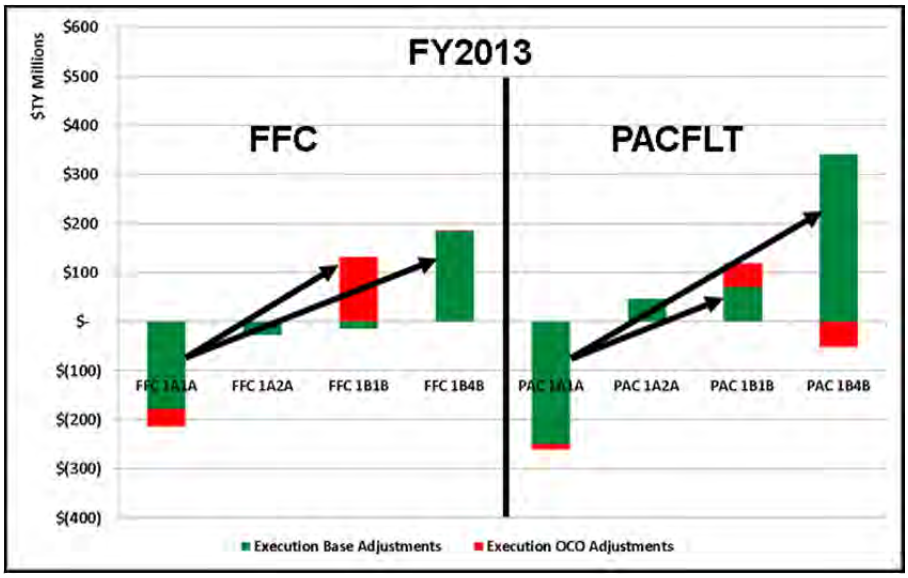
- One Fleet was taking risk or transferring excess funds out of one SAG (e.g., 1A1A) to support other AOR-specific priorities, while the other Fleet was short in that SAG and was having to transfer funds from another SAG
- Decisions by one Fleet to take some risk in a particular SAG (e.g., grounding a flying unit) were not aligned with actions in the other Fleet, which could result in an impact to overall Fleet readiness.

To assess the potential benefit, we review historical Fleet funding realignments, based on execution-year increases or decreases to the initial appropriation and

supplemental funding act levels. The next four figures show funding realignments in FYs 2013, 2014, 2015, and 2016, with base funding (from the appropriations acts) in green and supplemental funding in red. Arrows show the relation between funds that decreased and increased, but overall changes are not fully contained in these accounts (e.g., fuel price adjustments and moves to or from other SAGs).

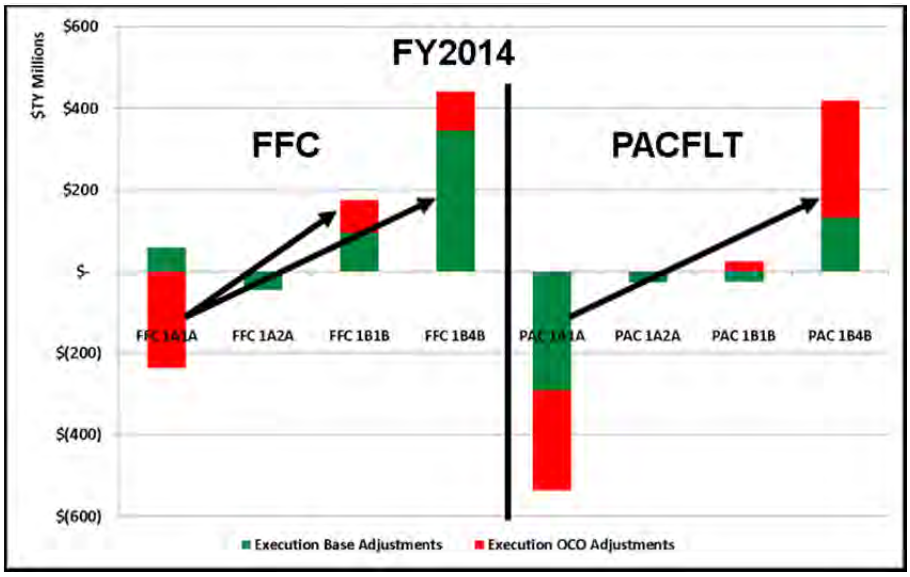
In Figures 22 and 23, we see strong alignment of funding changes in FY 2013 and FY 2014. Both Fleets decreased SAG 1A1A (FHP) funding and increased SAG 1B4B (Ship Maintenance). In FY 2013, both Fleets also increased funding for SAG 1B1B (Ship Operations), while in FY 2014 FFC increased this account, but PACFLT remained at the originally funded level.

Figure 22. FY 2013 execution-year readiness funding realignments



Source: OPNAV N82/FMB data.

Figure 23. FY 2014 execution-year readiness funding realignments

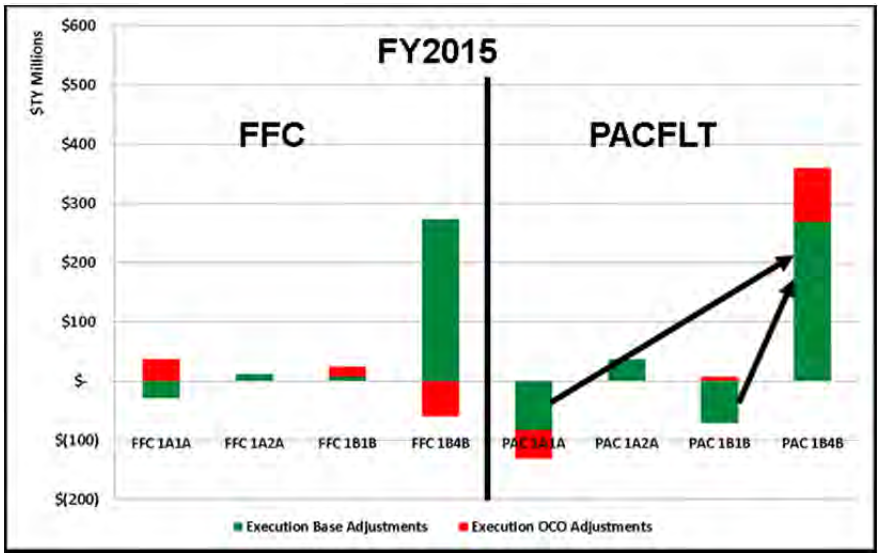


Source: OPNAV N82/FMB data.

From discussions with OPNAV N82/FMB, we understand that SAG 1A1A had excess funding in these years as it was funded to the full requirement, while there were not enough aircraft to support this level of effort. Subsequently for PB16, the Navy changed the process to fund to the "executable level" versus the required level, to eliminate this situation.

In FY 2015, Figure 24, the largest changes for both Fleets were increases to SAG 1B4B (Ship Maintenance). Other FFC readiness accounts effectively remained constant, while PACFLT decreased both SAGs 1A1A (FHP) and 1B1B (Ship Operations). Because the increases in 1B4B in both Fleets exceed other readiness account decreases, additional funds were realigned from other Fleet accounts.

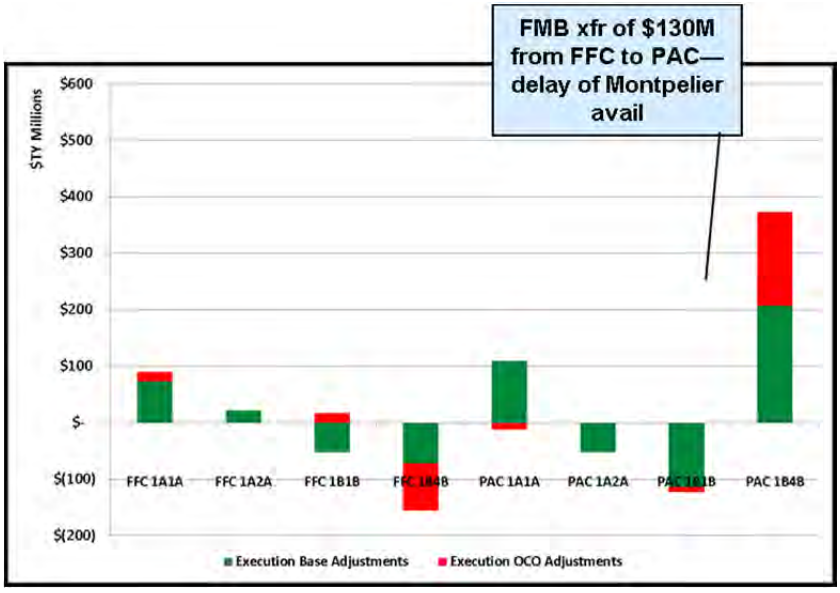
Figure 24. FY 2015 execution-year readiness funding realignments



Source: OPNAV N82/FMB data.

FY 2016, Figure 25, was the first year that SAG 1A1A was funded to the executable versus required level. We see both Fleets decreased SAG 1B1B funding and increased 1A1A funds in this year.

Figure 25. FY 2016 execution-year readiness funding realignments



Source: OPNAV N82/FMB data.

As noted in Figure 25, SAG 1B4B funding decreased in FFC and increased in PACFLT, but the decrease of $130 million in FFC was due to OPNAV N82/FMB realigning funding for the submarine USS *Montpelier*'s availability (which was not fully funded) to support several PACFLT surface ship availabilities.

In looking across these four years, we found only two accounts where one Fleet increased funding while the other decreased. The first was for SAG 1B1B in FY 2015, where the $24 million increase in FFC could have come from PACFLT decreases, but this represents only 1.2 percent of the total FFC 1B1B account. The second was for SAG 1A2A (Fleet Air Training) in FY 2016, where the $21 million increase in FFC could have come from the PACFLT decrease, which represents approximately 4.3 percent of FFC's total SAG 1A2A funding.

These results do not indicate that there are significant issues related to funding misalignment between the two Fleets. Given that funds within a single SAG currently can be realigned quickly by OPNAV N82/FMB, and given the statutory restrictions on transferring out funds in excess of $15 million from SAGs 1A1A, 1A5A, 1B1B, and 1B4B, we do not believe there is a significant issue with the current funding structure and controls. Therefore, we believe that the potential benefit in this area from consolidation would be small to none.

Metrics regarding Fleet health

With obligation and expenditure rates of the two Fleets aligned, and funding transfers for the most part similar in nature, we reviewed data from the Subsystem Capability and Impact Reporting (SCIR) and Decision Knowledge Programming for Logistics Analysis and Technical Evaluation (DECKPLATE) databases to see if there were differences in metrics related to aircraft or ship conditions. We then compare cost per flying hour (CPFH) and cost per steaming day (CPSD) between the two Fleets to identify differences that may indicate efficiencies in one Fleet versus the other. We use SCIR and DECKPLATE versus Aviation Management Supply and Readiness Reporting (AMSRR) data due to the greater level of data available with respect to both aircraft status and in-service/out-of-service time.

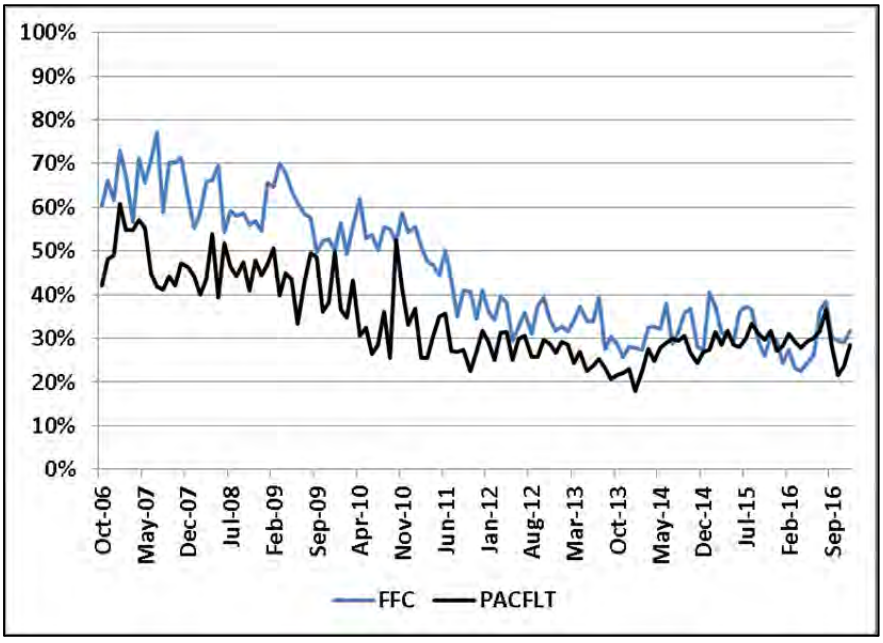
As shown in the following sections, there is a strong correlation between the two Fleets' metrics with respect to Fleet health, which indicates that the Navy Enterprises, overseen by the Lead TYCOMs, are ensuring similar material condition across the entire Navy Fleet. More detailed analysis to assess the CPFH or CPSD to achieve this similar performance could identify if there are differences in the efficiency of each Fleet in achieving these rates. In addition, we see that overall aircraft Fully Mission Capable (FMC) and Mission Capable (MC) rates are declining, while Not Mission Capable, Supply (NMCS) rates are increasing, which indicates that overall aircraft health is declining across both Fleets.

Aircraft mission capability metrics

For aircraft, we reviewed data from the SCIR-3 Report to plot trends for MC; FMC; Not Mission Capable, Maintenance (NMCM); and NMCS rates for key aircraft in both Fleets. We also reviewed Partially Mission Capable, Supply (PMCS) and Partially Mission Capable, Maintenance (PMCM) rates, and found that PMCM rates typically exceeded PMCS rates—similar to the relationship between NMCM and NMCS rates.

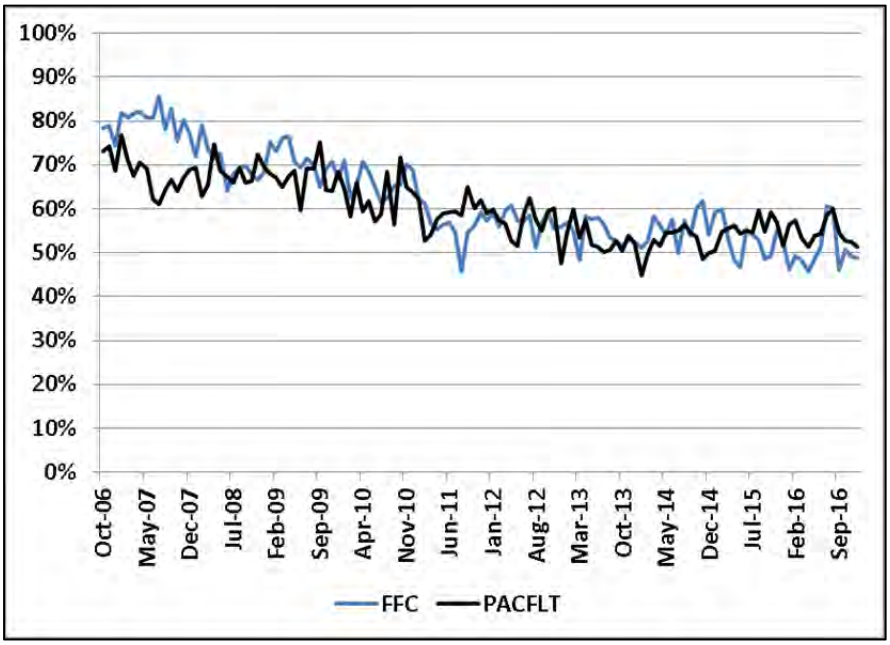
In Figures 26 to 29, we show comparisons of each Fleet's F/A-18E Super Hornet aircraft FMC, MC, NMCS, and NMCS rates, respectively. The data plots are very similar, showing FMC and MC rates decreasing over time, with the majority of the decrease due to an increase in the NMCM rates.

Figure 26. F/A-18E FMC rates, by month and Fleet



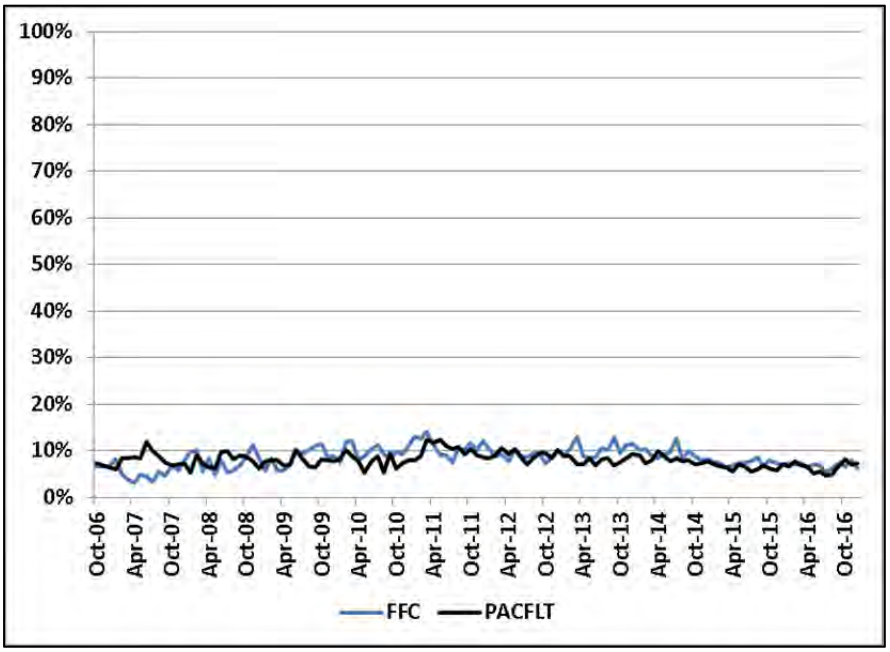
Source: SCIR-3 Report.

Figure 27. F/A-18E MC rates, by month and Fleet



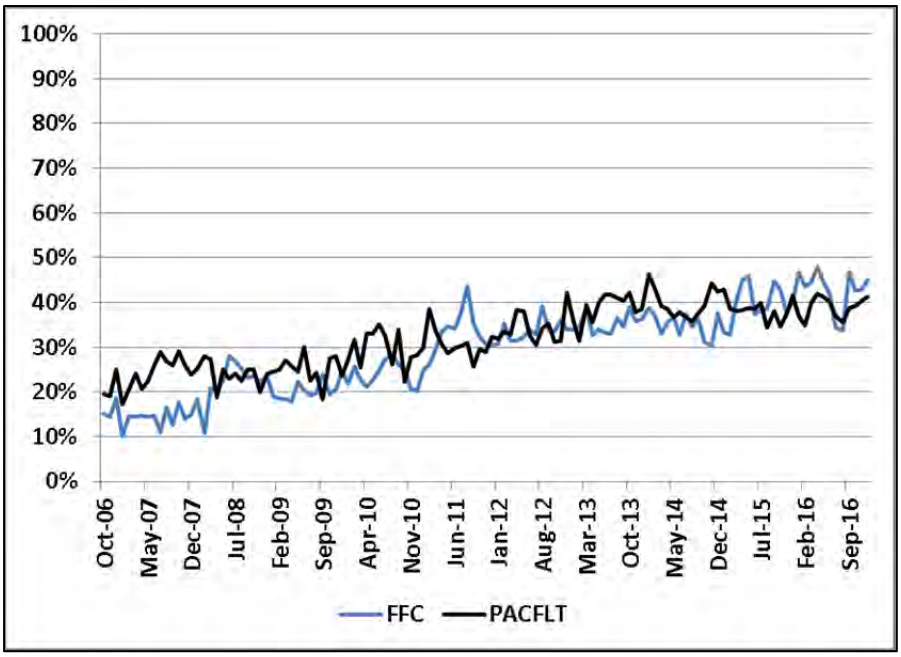
Source: SCIR-3 Report.

Figure 28. F/A-18E NMCS rates, by month and Fleet



Source: SCIR-3 Report.

Figure 29. F/A-18E NMCM rates, by month and Fleet



Source: SCIR-3 Report.

Using these same formats, but reducing the size of the graphs, we show similar data for F/A-18F and MH-60S aircraft mission capability rates in Appendix E. As with the F/A-18E, these data are strongly correlated.

We reviewed data for multiple aircraft type/model/series (T/M/S) and found no indication that one Fleet was delivering consistently higher FMC or MC rates than the other Fleet. Had this been the case, it would have indicated a higher level of material condition in one Fleet, which would represent a higher level of readiness in this respect. Based on the uniformity of these rates, we do not see aircraft FMC and MC rates as a discriminator that would change with consolidation, but we do note increasing NMCM rates and decreasing FMC and MC rates as an indication that Fleet-wide aircraft readiness is decreasing.

Ship and submarine CASREP metrics

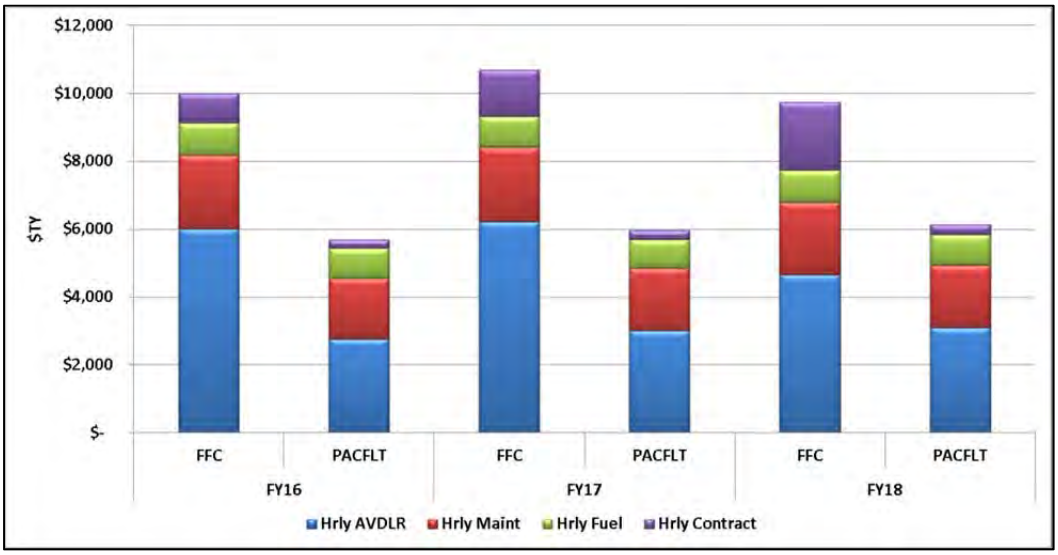
For ships and submarines, we reviewed data regarding casualty reports (CASREPS) for Conditions 2, 3, and 4, by ship class and Fleet, from the DECKPLATE database. Because these data are classified, they are provided in the classified appendix to this report [30]. As with aircraft MC and FMC rates, we see CASREP reporting being

generally uniform between the two Fleets. For this reason, we do not see either Fleet as being superior or inferior to the other in maintaining ship material condition. Additional discussion regarding the CASREP rates and trends is included in the classified appendix, but we find that, as with aircraft, rates are predominantly similar in both Fleets.

Cost per flying hour (CPFH), by T/M/S and Fleet

Using data from the OP-20 FHP report from OPNAV N83, we compare average CPFH for the four main special interest (SI) codes in SAG 1A1A: Flying Hours–AVDLR (FA); Flying Hours–Fuel (FF); Flying Hours–Maintenance (FM); and Flying Hours–Contract Maintenance (FW). Many of the Navy T/M/S have consistent values across both Fleets, but some vary, particularly in the area of contract maintenance (FW). Figure 30 shows a comparison of total CPFH, by SI, for the E-2C Hawkeye aircraft from FY 2016 to FY 2018. The total CPFH in FY 2018 is $3,603 (59 percent) more per hour in FFC than PACFLT, driven by higher hourly costs for FA ($1,567) and FW ($1,702).

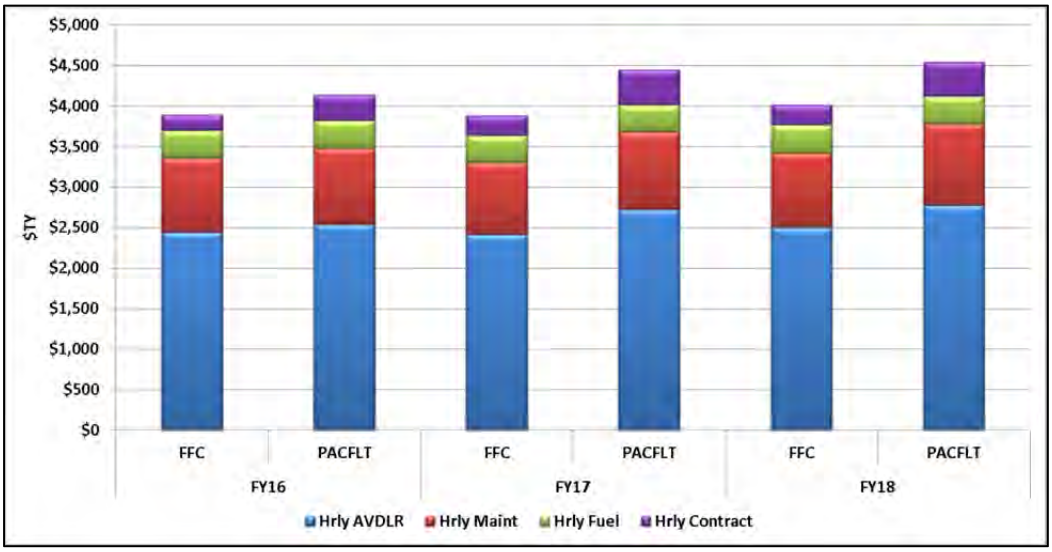
Figure 30. Comparison of Fleet E-2C cost per flying hour, by SI code



Source: OP-20 Flying Hour Program file.

Figure 31 shows a comparison of MH-60S CPFH, where PACFLT aircraft averaged $528 per hour more than FFC, based on higher CPFH for FA ($277) and FW ($177).

Figure 31. Comparison of Fleet MH-60S Costs per Flying Hour, by SI Code



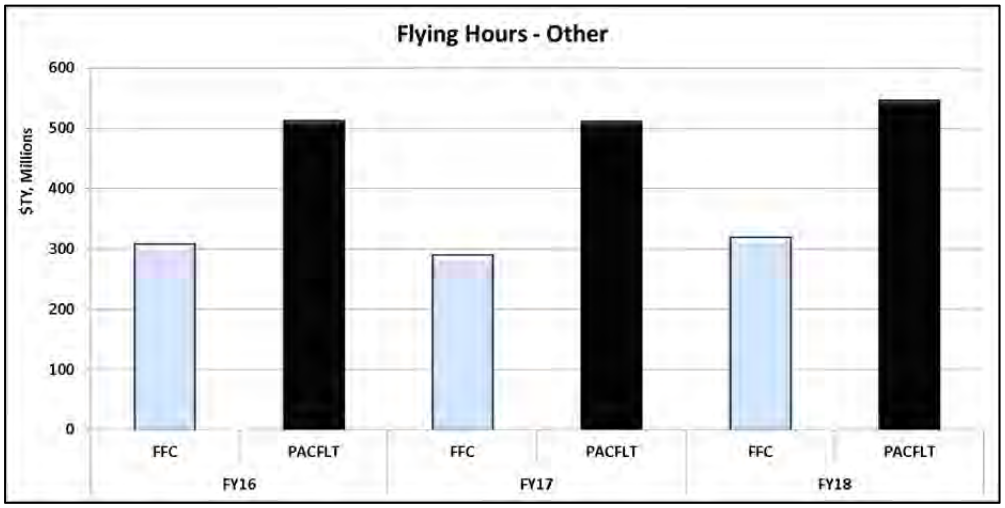
Source: OP-20 Flying Hour Program file.

Figures showing comparisons, by T/M/S, Fleet, and FY for each of these four flying hour SI codes are included in Appendix F: Cost per Flying Hour Comparisons, by Special Interest Code. While there are a number of differences in rates between T/M/S, the largest deltas between FFC and PACFLT for an individual T/M/S are in the SIs related to Maintenance (FM) and Contract Maintenance (FW).

Cost for Flying Hours–Other (FO) special interest code

SI code FO in SAG 1A1A includes such categories as Temporary Assigned Duty (TAD), staffing, and simulators. Figure 32 shows a comparison of the total funding for Flying Hours–Other (FO) in each Fleet, from FY 2016 to FY 2018. PACFLT funding for FO is 71 percent higher than FFC for both this three-year period and for FY 2018—equating to a difference of approximately $227 million dollars in FY 2018.

Figure 32. Total Flying Hours–Other funding, by Fleet



Source: PBIS, PB18 data file.

Cost per steaming day (CPSD), by ship class, OFRP phase, and Fleet

Similarly, there are differences between the two Fleets in the average cost per steaming day, by ship class and phase of OFRP. Table 3 shows the cost per steaming day factors for FY 2018, provided by OPNAV N83. Further assessment of the largest cost differences (e.g., $114,350, or 55 percent more for CVN-68–class aircraft carriers in FFC than in PACFLT) could identify reasons for these deltas and potential ways to lower the higher Fleet's rates.

Table 3. FY 2018 average cost per steaming day, by ship class, phase, and Fleet

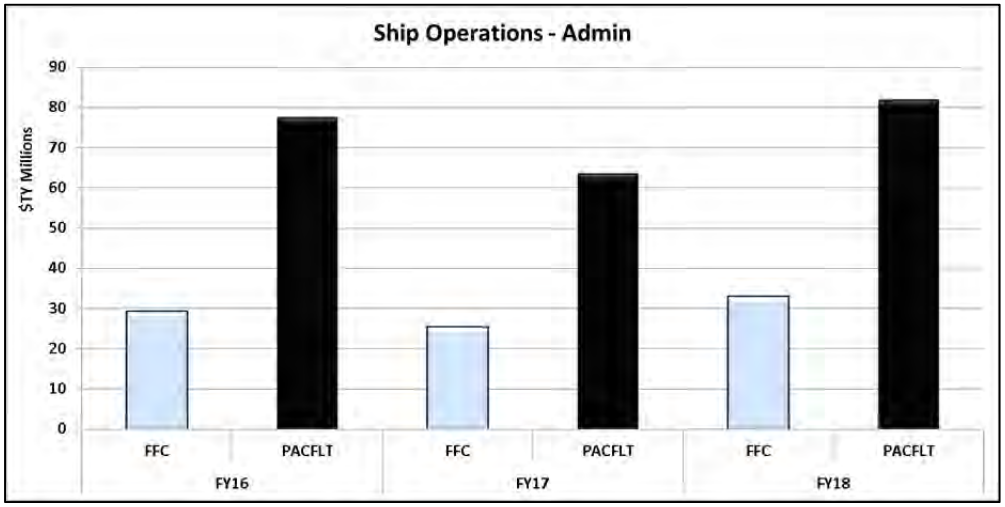
					Delta (PACFLT - FFC)			
	Deployed Phase ($K)	Sustain Phase ($K)	Integrated Phase ($K)	Basic Phase ($K)	Deployed Phase ($K)	Sustain Phase ($K)	Integrated Phase ($K)	Basic Phase ($K)
CG-0047								
60	114.35	180.47	179.12	194.37				
70	118.32	188.96	199.25	219.04	3.97	8.49	20.14	24.67
CVN-0068								
60	126.59	276.17	321.53	321.53				
70	150.32	207.18	215.22	207.18	23.72	(68.99)	(106.31)	(114.35)
DDG-0051								
60	103.96	169.57	164.90	178.67				
70	106.63	154.72	175.52	192.49	2.67	(14.85)	10.62	13.82
DDG-1000								
60				167.32				
70				166.36				(0.96)
LCS-0001								
60			66.97	70.19				
70	65.02		51.33	43.85			(15.64)	(26.34)
LHD-0001								
60	163.53	421.86	177.50	304.59				
70	223.30	463.13	222.67	366.95	59.77	41.27	45.17	62.36
LPD-0017								
60	73.97	223.65	80.14	154.78				
70	93.47	280.18	117.28	215.02	19.51	56.54	37.14	60.24
LSD-0041								
60	61.19	207.83	72.38	142.83				
70	67.00	154.84	67.96	120.08	5.80	(53.00)	(4.42)	(22.74)
LSD-0049								
60		205.48		140.23				
70			69.12	121.24				(18.98)
SSBN-0726								
60	9.31			96.17				
70	10.47			78.09	1.16			(18.08)
SSGN-0726								
60	17.41			64.79				
70	20.30			58.51	2.88			(6.28)
SSN-0688								
60	24.03	37.57	40.12	83.52				
70	19.52	42.25	47.16	110.22	(4.51)	4.68	7.04	26.70
SSN-0774								
60	24.03	37.57	40.12	83.52				
70	18.36	50.27	57.97	123.23	(5.67)	12.70	17.85	39.70

Source: OPNAV N83 Cost per Ship Class, OFRP Phase, and Fleet data.

Annual cost for 1B1B/SX, Ship Operations–Ship Administration

Total ship administration costs are also different between the two Fleets, as shown in Figure 33, with PACFLT having an annual cost for this SI more than double that of FFC.

Figure 33. Example of FFC Cost Elements summary data



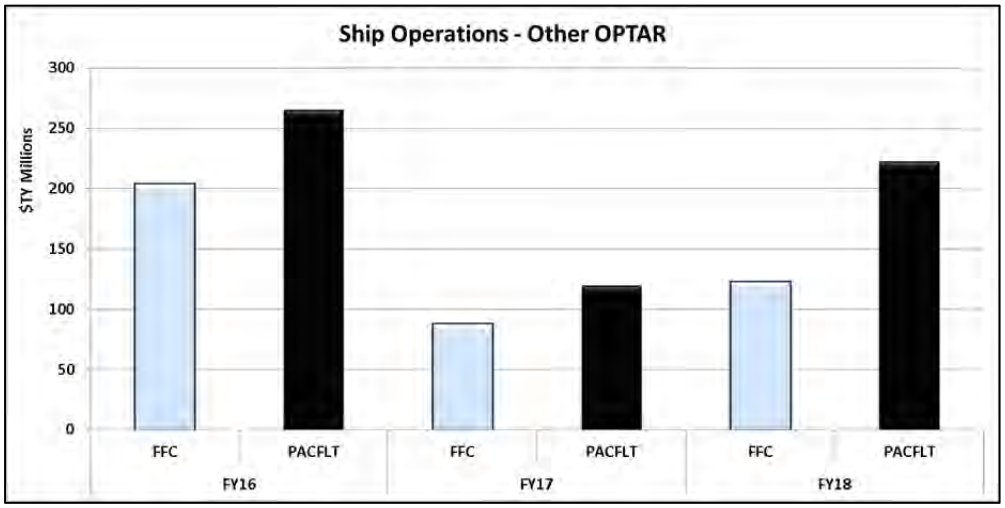
Source: PBIS, FY 2018 PB data file.

Annual cost for 1B1B/SO, Ship Operations–Other OPTAR

The final area for consideration is funding for the SI code for Ship Operations–Other Operating Target (OPTAR), shown in Figure 34. These costs seem to have varied to a large extent from FY 2016 to FY 2018, which indicates that it may have been a lower priority than other SAG 1B1B SIs.

As with the ship administration SI, PACFLT funding for Other OPTAR is higher than in FFC each year, and 81 percent higher in FY 2018.

Figure 34. Example of FFC Cost Elements summary data



Source: PBIS, FY 2018 PB data file.

Our limited review of these metrics identified some large differences, for example in CPFH for the E-2C and CPSD, by phase, for some ship classes. The causes of these differences should be identified, and if lessons learned can be extracted from the differences, applied to improve overall Fleet efficiency. This analysis does not require consolidation of funding in a single BSO, though it will require cooperation to ensure that common approaches and data definitions are used.

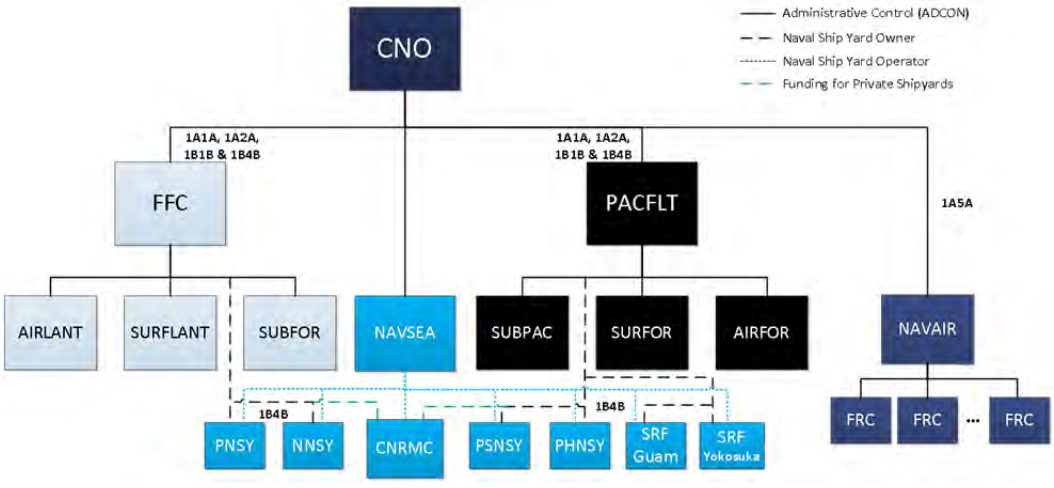
Organizational Structure with Respect to Fleet Readiness Funding

In this section, we provide a brief overview of current USN organization and reporting relationships, and identify how readiness funding is programmed and executed within this structure. This status-quo organization forms the baseline configuration, which will be compared with a proposed Single Readiness Integrator Framework, discussed earlier in this report.

Current Navy organization and processes for readiness account funding

Figure 35 depicts the current Navy administrative and funding structure associated with the OMN readiness accounts.

Figure 35. Current readiness administrative and funding structure



Source: Discussions with OPNAV, Fleet, and TYCOM staffs.

The one key feature of this structure not already discussed in previous sections is oversight and management of the Naval Shipyards (NSYs) and ship repair facilities (SRFs). As shown in Figure 35, these facilities are owned and funded by the Fleets, and operated by Naval Sea Systems Command (NAVSEA). As shown in the figure, alignment of these NSYs and maintenance facilities is as follows:

- FFC—Portsmouth NSY (PNSY) and Norfolk NSY (NNSY)
- PACFLT—Puget Sound NSY (PSNSY), Pearl Harbor NSY (PHNSY), Guam SRF, and Yokosuka SRF.

Navy processes associated with readiness account funding fall into two distinct sets. The first regards the determination of Fleet readiness operational requirements, which includes the planning, programming, and budgeting to support these requirements. The second set of processes deal with activities conducted during the execution-years—predominantly, those actions that occur in the first FY of the readiness account fund's availability.

In the next two sections, we provide more detailed descriptions of each of these processes, and document the associated funding process flows and responsibilities, to serve as the baseline for comparison with the proposed Single Readiness Integrator Framework.

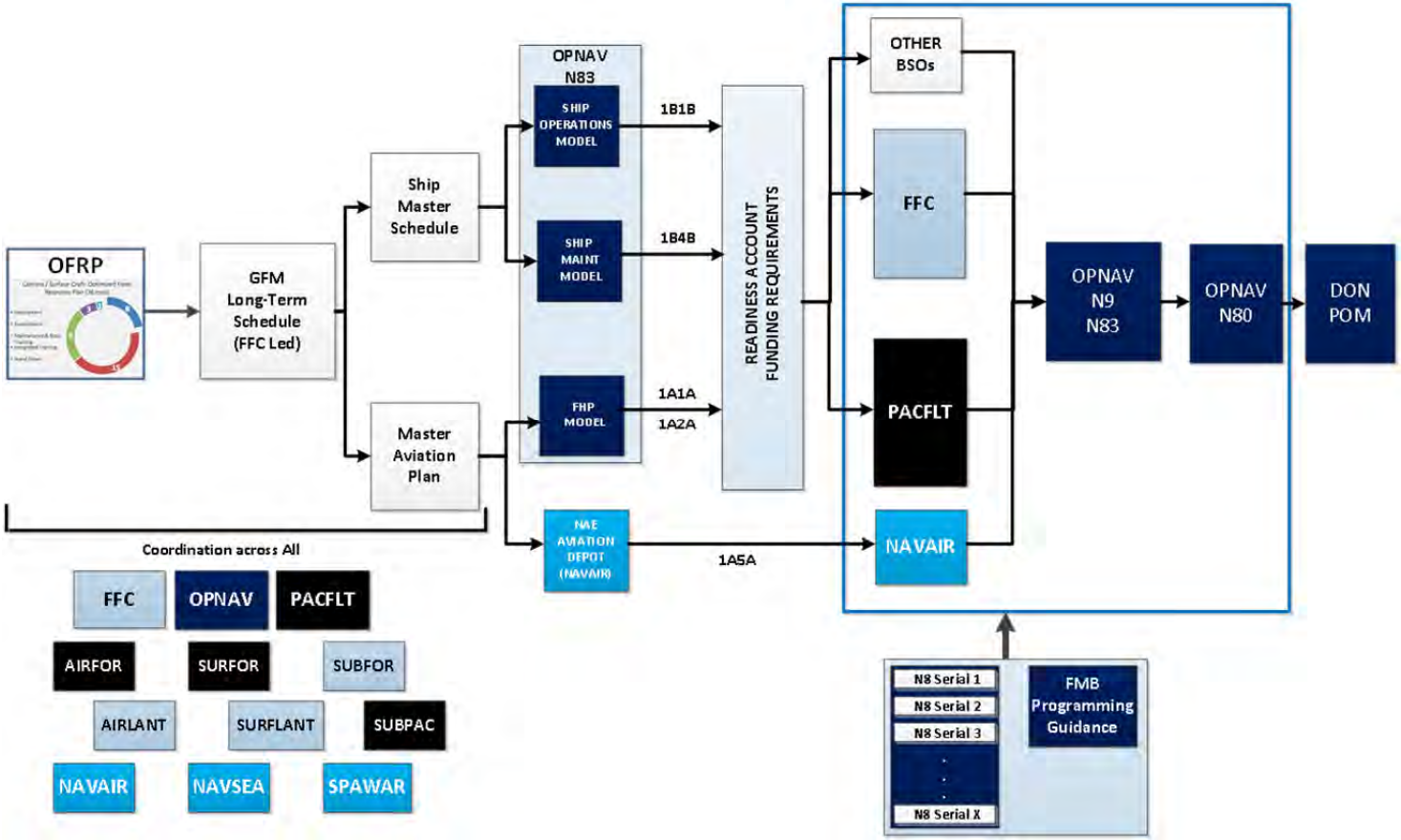
Determination and submission of Fleet readiness funding requirements

The determination of Fleet readiness requirements and the funding required to support these requirements is a very structured and collaborative process. Figure 36 provides a graphic representation of this process, including the major activities and participants.

In OPNAVINST 5440.77B, *Missions, Functions, and Tasks of United States Fleet Forces Command*, "CNO delegates to COMUSFLTFORCOM authority to generate and communicate Navy global force management solutions concerning general purpose forces and ad hoc forces retained by the Secretary of the Navy" [14]. Under this authority, FFC leads the process to coordinate the OFRP schedule and identify forces to support DOD Global Force Management (GFM) requirements. These processes are collaborative in nature, with participants from across the OPNAV staff, FFC, PACFLT, and the Lead and Follow TYCOMs. The resulting OFRP and GFM schedules, are then used to generate the Ship Master Schedule (SMS) and Master Aviation Plan (MAP).

OPNAV N83 then uses the SMS and MAP to build cost estimates based on average historical operating costs of the individual ship classes (e.g., DDG) and aircraft T/M/S (e.g., F/A-18C), and their phase in the OFRP schedule.

Figure 36. Current programming and budgeting structure for readiness funding



Source: Discussions with OPNAV and Fleet staffs.

The OPNAV N83 funding estimates, informed by FMB planning factors for funding levels and anticipated supplemental funding levels, are then passed to the Fleets for their Program Objective Memorandum (POM) submission. The Fleets' POM efforts are performed in accordance with CNO guidance, which is provided in a series of "serials" issued by the Deputy Chief of Naval Operations, Integration of Capabilities and Resources (OPNAV N8). These serials provide information on the POM development processes, timeline, and fiscal guidance.

The Fleets pass their total budget POM submissions, which include the readiness accounts, to OPNAV N9 (the Resource Sponsor, or RS) for consolidation. OPNAV N9 directorates work with OPNAV N83 to validate the Fleet submissions and finalize them for submission to OPNAV N80 and FMB for the DON POM. Given the level of coordination and oversight in this current process, we would not expect it to change as a result of consolidation.

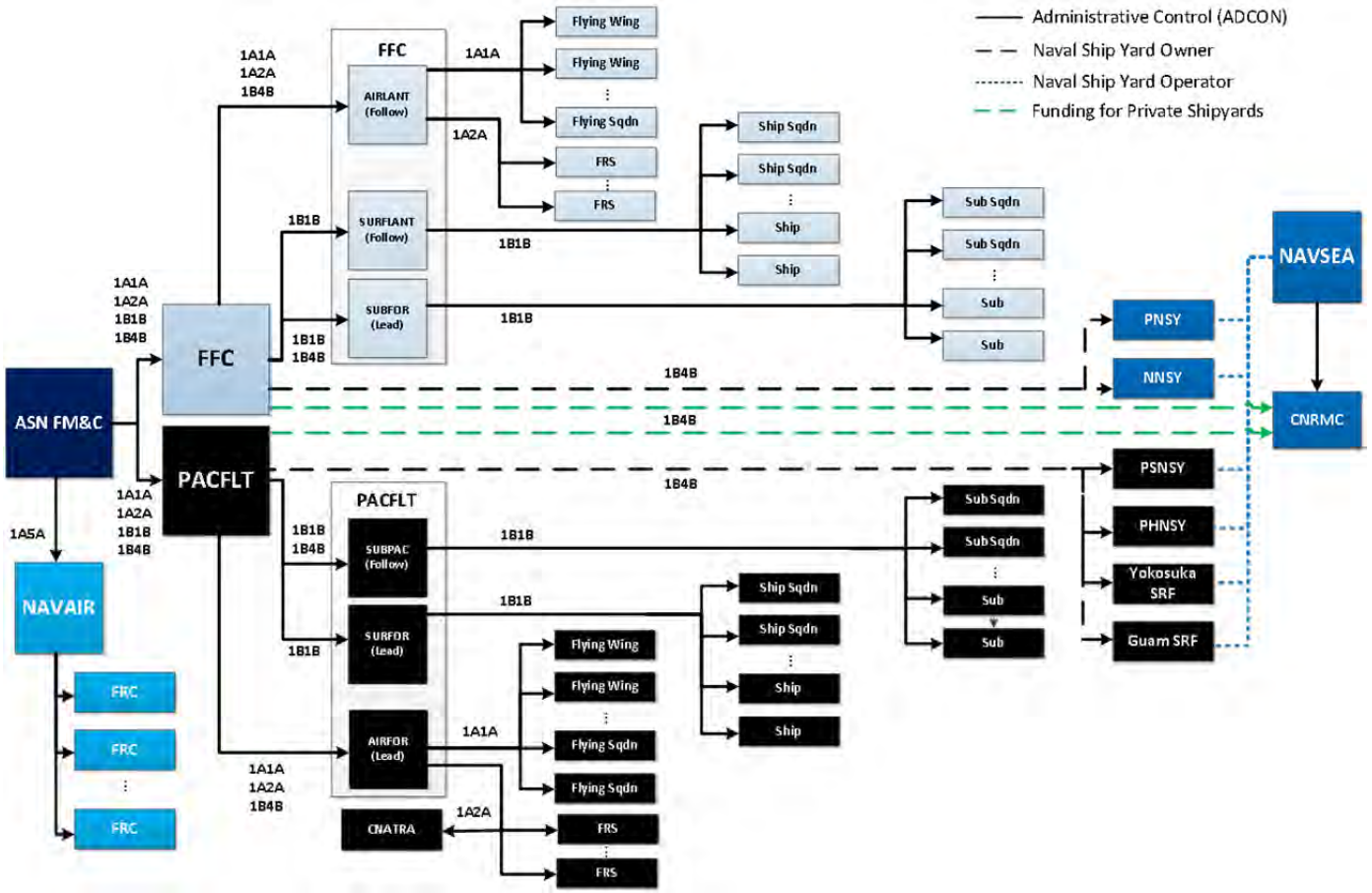
Current Fleet structure for execution of readiness accounts

When the DOD (or Omnibus) appropriation act is signed into law by the President, all Navy funds are received by the Office of the Assistant Secretary of the Navy for Financial Management & Comptroller (ASN(FM&C)) and distributed by FMB to Navy BSOs and the Marine Corps for execution. The FFC and PACFLT BSOs then distribute readiness funding to their respective TYCOMs for further distribution to their subordinate units, to the public ship depot maintenance facilities, or to Commander, Navy Regional Maintenance Centers (CNRMC) for ship availabilities to be performed by commercial shipyards.

One difference noted with respect to authorities when funds are distributed is that PACFLT passes the responsibilities associated with 31 U.S.C., *Money and Finance*, section 1517, "Prohibited Obligations and Expenditures" (commonly referred to as the "Anti-Deficiency Act"), to their TYCOM commanders, where FFC maintains this authority at the FFC comptroller level.

Figure 37 shows readiness funding flow distribution, by SAG, once appropriated.

Figure 37. Current execution structure for readiness funding



Source: Discussions with OPNAV and Fleet staffs.

Single Readiness Integrator Framework

In this section, we describe the organizational structure that FFC has proposed—the Single Readiness Integrator Framework—which we will use as the basis for comparison with the current organizational structure. We will discuss the current organizational structure in more detail in a later section.

In support of Blue LOE Task 5, FFC and PACFLT initiated an effort to identify where increased standardization between the two Fleets could be attained. This effort was led by FFC, with PACFLT participation. PACFLT eventually withdrew from the effort, due to the scope of the alternatives being proposed by FFC, which included alternatives that removed all administrative control (ADCON) relationships between PACFLT and the TYCOMs. FFC continued on with the effort and evaluated four potential courses of action (COAs) for the FFC/PACFLT relationship:

1. Lead/Lead Structure (Status Quo)
    - BSO 60 and BSO 70 funding remain separate
2. Lead/Follow Structure, with all Lead TYCOMs under FFC and all Follow TYCOMS under PACFLT
    - BSO 60 and BSO 70 funding remain separate
3. Lead/Follow Structure, with all Lead and Follow TYCOMs under FFC
    - BSO 60 and BSO 70 funding remain separate, but PACFLT provides BSO 70 funding in a reimbursable relationship to BSO 60 to execute
4. Lead/Liaison Structure, with all Lead and Follow TYCOMs under FFC
    - BSO 60 and BSO 70 funding combined under FFC.

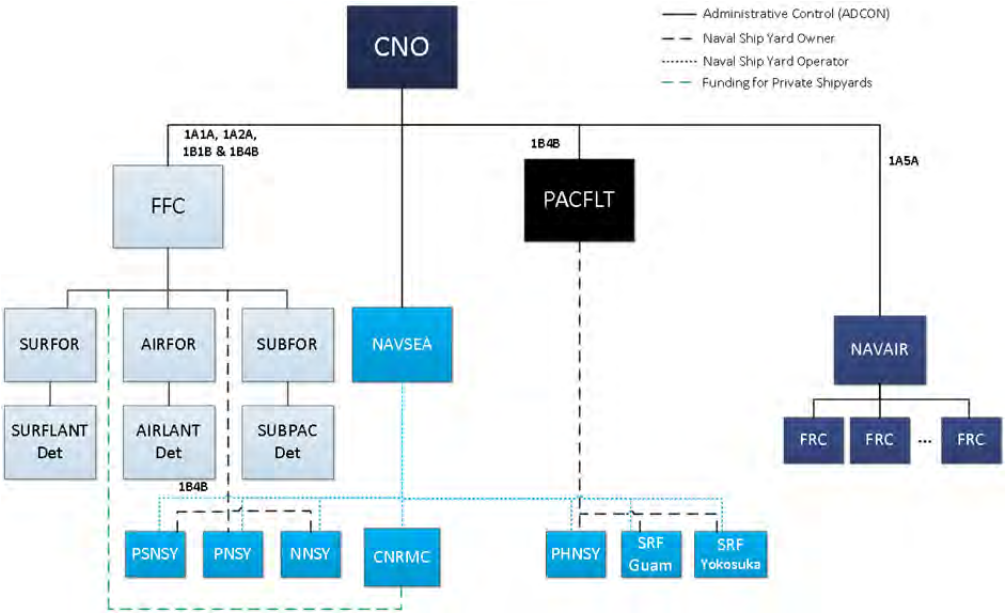
FFC's recommendation, based on perceived efficiencies and mandated major headquarters activities (MHA) reductions, is that the Navy pursue COA 4, with FFC as Lead and PACFLT as a liaison.

Single Readiness Integrator funding flow

During the conduct of the study, the CNA study team was asked to ensure that FFC agreed with whatever Single Readiness Integrator Framework was evaluated. As a result, the team evaluated FFC's recommended Single Readiness Integrator

Framework, COA 4—Lead/Liaison structure, as proposed by the FFC Executive Director (Figure 38).

Figure 38. FFC-recommended Single Readiness Integrator Framework

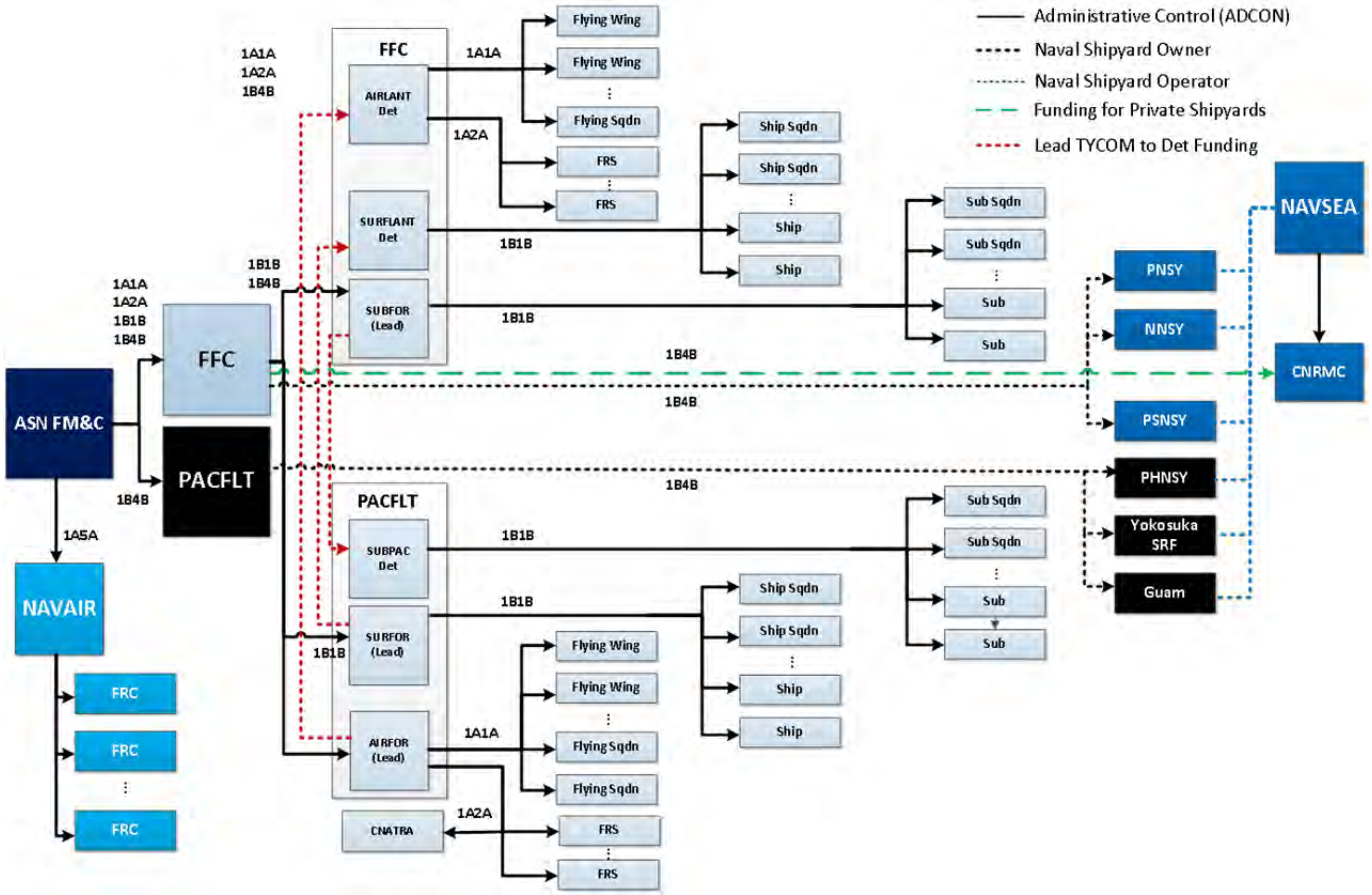


Source: Discussions with FFC.

In this recommended structure, all administrative control for the TYCOMs would transition to FFC, and the Follow TYCOMs would become Detachments (Dets) working for the Lead (now, only) TYCOM. The intent is to initially retain the current Lead TYCOMs, and evaluate whether that structure should be changed (i.e., moving all TYCOMs to Norfolk) at some point in the future. The recommended structure would also realign the Puget Sound Naval Shipyard (PSNSY) under FFC, but leave Pearl Harbor Naval Shipyard (PHNSY), the Guam Ship Repair Facility (SRF), and the Yokosuka SRF under PACFLT. All Commander, Navy Regional Maintenance Centers (CNRMC) funding, for commercial ship depots, would come through FFC.

Figure 39 shows how readiness funds would flow in this structure, with all SAG 1A1A, 1A2A, and 1B1B funds going through FFC to the single Lead TYCOM for each type, which would then distribute to the type detachments and to direct reporting units.

Figure 39. Flow of readiness funding under proposed Single Readiness Integrator Framework



Source: Discussions with FFC.

Other military service structures and processes for Readiness Force Generation funds

The study team was also asked to identify the organizational structures and processes used by the U.S. Air Force (USAF) and U.S. Army (USA) for programming and executing their equivalent Fg responsibilities. This information provides additional context for the evaluation of current and proposed USN constructs. As will be shown, neither the Air Force or Army has a single readiness integrator with all of the readiness funding for Force Generation (Fg), as is proposed in the Navy Single Readiness Integrator Framework.

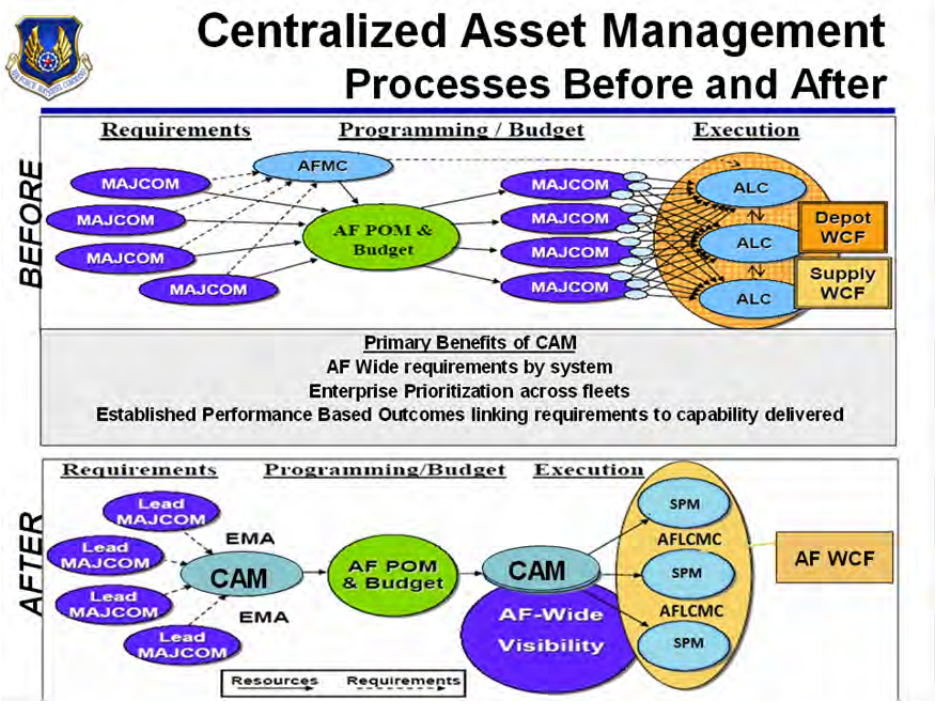
U.S. Air Force

As shown in Figure 40, the USAF has changed from a structure where each major command (MAJCOM) develops its own readiness goals and funding, with inputs to Air Force Materiel Command (AFMC) regarding the level of depot maintenance requirements, to a single Centralized Asset Management (CAM) process. This process is implemented through Air Force Manual (AFM) 63-143, *Centralized Asset Management Procedures* [31], with participation from Headquarters, Air Force (HAF) and all MAJCOMs (both active and Reserve).

In the "before" structure, each MAJCOM would receive the funding required for its Flying Hour Program (FHP) and the level of depot maintenance that was programmed for its forces. Each MAJCOM would then pay its own FHP costs (fuel, depot-level reparables (DLRs), and consumable parts) and the level of depot-purchased equipment maintenance (DPEM) provided by the individual Air Logistics Centers (ALCs), which are under AFMC. Funds provided to the ALCs were managed through a Depot Working Capital Fund (WCF) for DPEM, and a Supply WCF for DLRs.

In the current (or "after") construct, the USAF has identified Lead MAJCOMs for the 12 USAF core functions (described in more detail in later sections), which consolidate inputs from all MAJCOMs performing those functions. These inputs are then coordinated through the CAM governance structure and funded into a single USAF program element (PE). Funding is then provided to the single program managers (SPMs) in the Air Force Life Cycle Management Center (AFLCMC), a subordinate unit of AFMC. The two WCFs have also been consolidated into a single Air Force WCF (AF WCF).

Figure 40. Air Force CAM processes—before and after

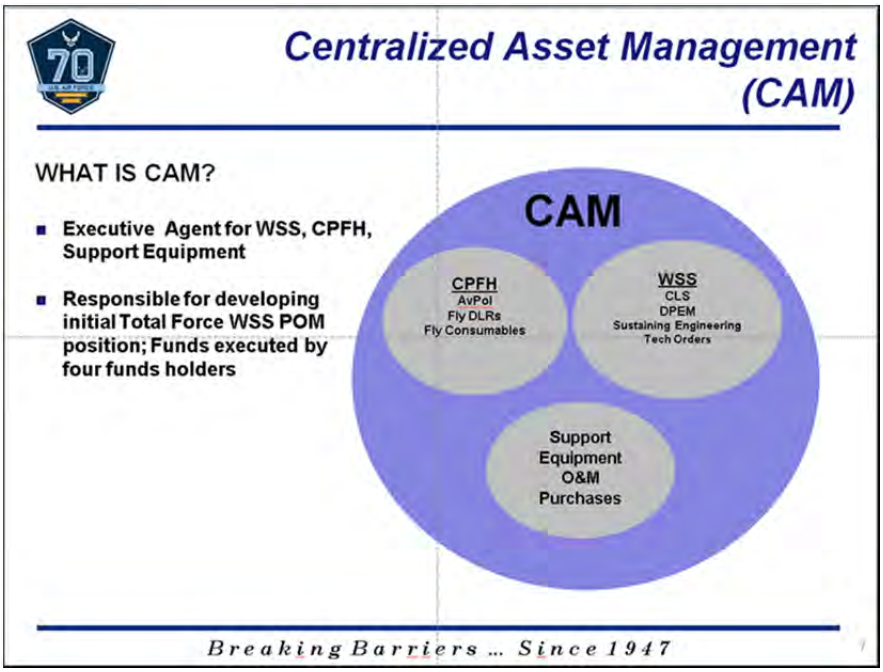


Source: AF/A4PY briefing to CNA study team, May 24, 2017 [32].

The CAM account includes funding in three major categories, shown in Figure 41:

- Cost per Flying Hour (CPFH)
  - Aviation, Petroleum, Oil, and Lubricants (AvPol)
  - Aviation Depot-Level Repairables (Fly DLRs)
  - Aviation Consumables (Fly Consumables)
- Weapon System Sustainment (WSS)
  - Contract Logistics Support (CLS)
  - DPEM
  - Sustaining Engineering
  - Technical Orders
- Support Equipment and Operations and Maintenance (O&M) purchases.

Figure 41. Air Force CAM Overview



Source: AF/A4PY briefing to CNA study team, May 24, 2017 [32].

Figure 42 provides a matrix that shows the alignment and responsibilities, by MAJCOM, for the 12 USAF service core functions. Each core function has a Lead MAJCOM identified, which coordinates across all MAJCOMs supporting that core function. In some cases, there is only one MAJCOM associated with the core function (e.g., Nuclear Deterrence Operations), while others (e.g., Global Precision Attack) include up to five MAJCOMs. The USAF MAJCOMs are as follows:

ACC	Air Combat Command
AETC	Air Education and Training Command
AFGSC	Air Force Global Strike Command
AFMC	Air Force Materiel Command
AFRES	Air Force Reserve
AFSOC	Air Force Special Operations Command
AFSPC	Air Force Space Command
AMC	Air Mobility Command
ANG	Air National Guard (National Guard Bureau (NGB))
PACAF	Pacific Air Forces
USAFE	U.S. Air Forces in Europe

Figure 42. U.S. Air Force CAM portfolio core functions and lead integrators

Centralized Asset Management Portfolio Complexity

FOUO

Core Function Lead Integrator (in blue), Lead Command/Using Command with interest (x's)												
*WS assignment by Lead Command in accordance with AFPD10-9 **Service Core Function**	ACC	AETC	AFGSC	AFMC	AFRC	AFSOC	AFSPC	AMC	NGB	PACAF	USAFE	HAF Functional
Nuclear Deterrence Ops			AFGSC/CC									A10
Air Superiority	ACC/CC				X				X	X	X	A3/5
Space Superiority							AFSPC/CC					A3/5
Cyberspace Superiority							AFSPC/CC					A3/5,A6
Global Precision Attack	ACC/CC				X				X	X	X	A3/5
Rapid Global Mobility					X			AMC/CC	X	X	X	A3/5
Special Operations					X	AFSOC/CC			X			A3/5
Global Integrated ISR	ACC/CC				X				X			A2
Command and Control	ACC/CC				X		X		X	X		A2,A3/5A 4/7,A6
Personnel Recovery	ACC/CC				X				X	X	X	A3/5
Education & Training		AETC/CC										A3/5
Agile Combat Support				AFMC/CC								A1,A3/5A 4/7,A0

Source: AF/A4PY.

Note: "X" indicates where MAJCOMs have resources aligned to a core function

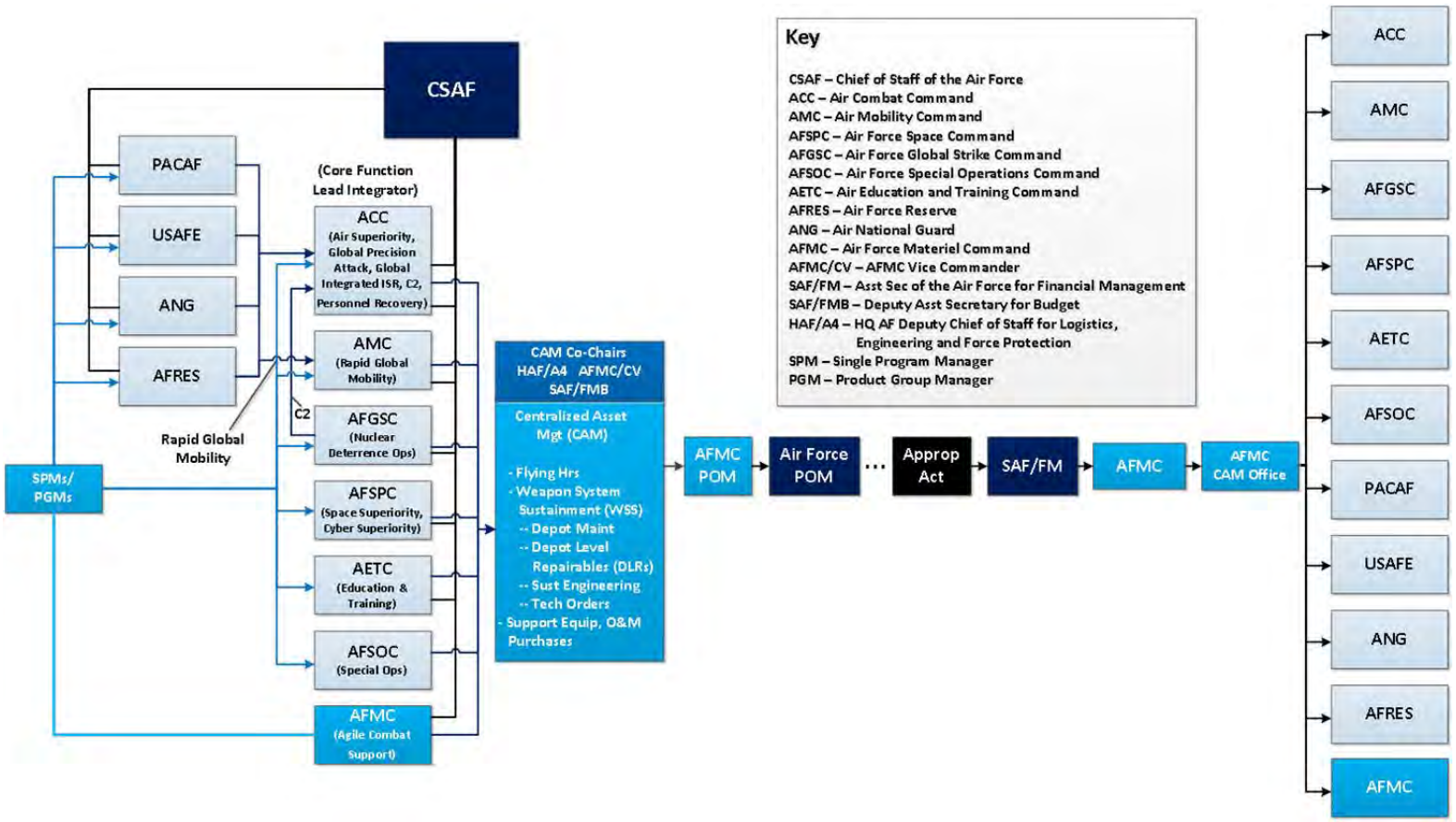
The CAM governance structure consists of three levels, each increasing in responsibility and grade structure. The first is the CAM Advisory Council, which is co-chaired by the AF/A4F and the AFMC Director of Budget (AFMC/FMB), with participants from all MAJCOMs, the HAF, and Program Office Program Managers and Product Support Managers.

The next level is the CAM Executive Steering Group, chaired by the AFMC Executive Director, with more senior-level participants from the HAF and MAJCOMs, as well as the acquisition Program Executive Officers (PEOs) and ALC commanders.

The third and most senior level, the CAM Executive Committee, is chaired by the AFMC Vice Commander, Air Force Deputy Chief of Staff for Logistics, Engineering and Force Protection (AF/A4), and the Air Force Deputy Assistant Secretary for Budget (SAF/FMB). Executive Committee members also include the MAJCOM Vice Commanders and key HAF representatives. This body approves all CAM-related decisions and funding levels.

The participants and flow used in developing the funding requirements and distribution are shown in Figure 43. As shown, AFMC serves the role of honest broker, distributing funding and adjusting during the execution-year based on priorities established by the CAM Executive Committee at the start of the FY.

Figure 43. U.S. Air Force, Force Generation requirements and funding structure



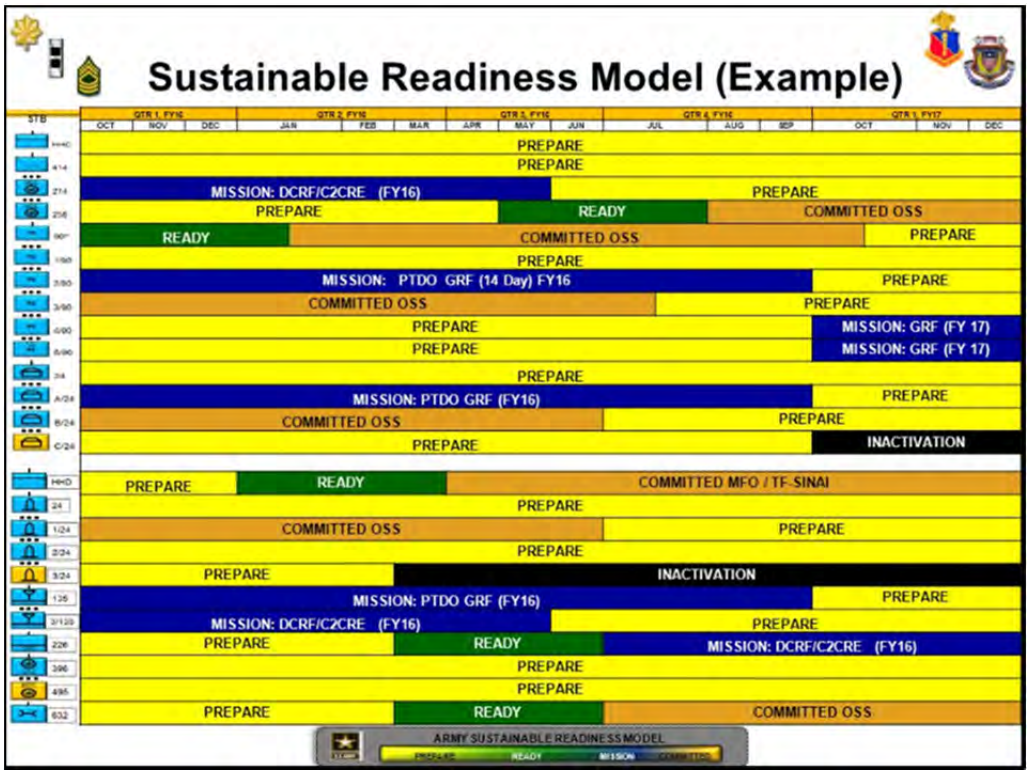
Source: Discussions with USAF.

U.S. Army

The determination of Fg requirements and funding for the U.S. Army (USA) is very similar to the current USN construct. The responsibility for Fg funding falls effectively to three USA major commands (MACOMs)—U.S. Army Forces Command (FORSCOM), U.S. Army Europe (USAREUR), and U.S. Army Pacific (USARPAC).

The Army has transitioned from its Army Force Generation Model (ARFORGEN) to a new Sustainable Readiness Process (SRP), which is similar in approach to the USN Optimized Fleet Response Plan (OFRP). As shown in the example of the Sustainable Readiness Model (SRM) in Figure 44, units progress through three phases: prepare, ready, and mission.

Figure 44. U.S. Army Sustainable Readiness Model example



Source: Slide from Brigade S-1 Operations Course briefing on Direct Personnel Readiness Management (slide 41), May 2016, http://slideplayer.com/slide/11696192/.

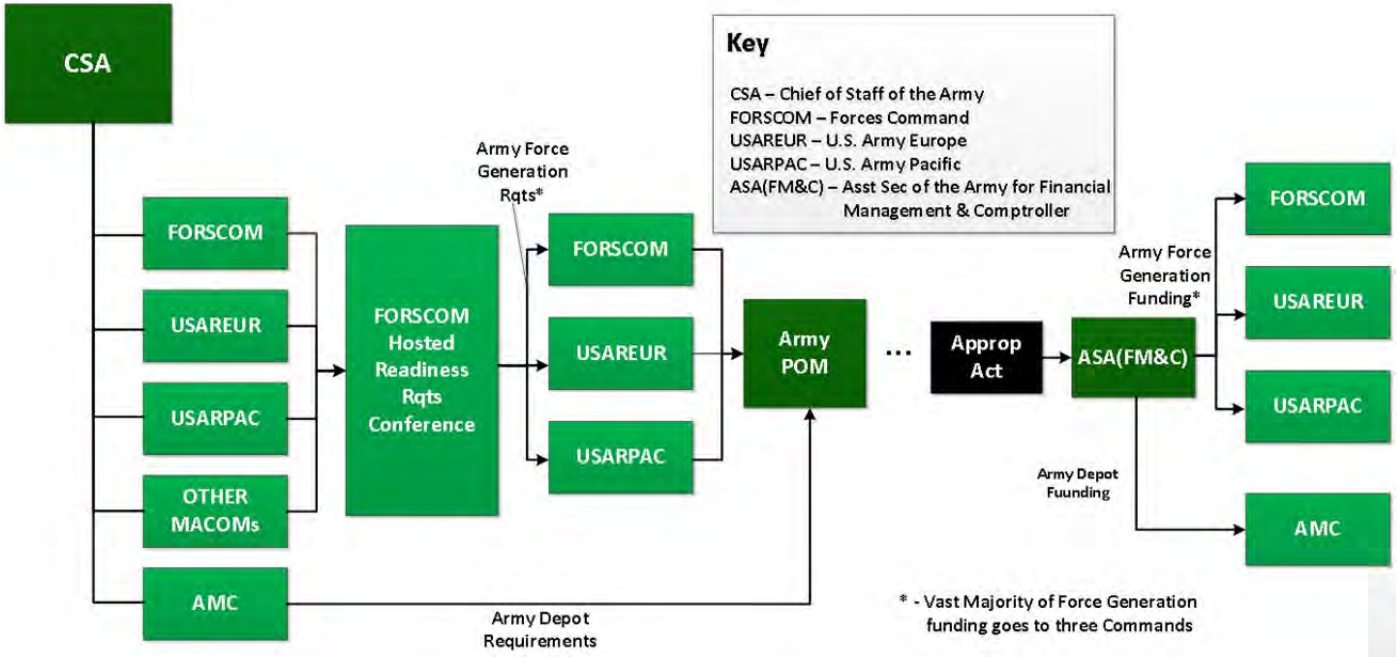
In a January 20, 2016 memorandum to "All Army Leaders," the Chief of Staff of the Army (CSA) provided his Army Readiness Guidance, Calendar Year 2016–2017 [33]. In this memorandum, he notes the following:

> **6. Sustainable Readiness:**
>
> a. Sustainable Readiness is the Army's force generation concept, supported by a comprehensive resourcing strategy that is adapted to the needs of a globally responsive and regionally engaged contingency force. Given the resources available and planned for our Army, SRP will build and preserve the highest possible unit and strategic readiness across the total force, enabling the Army to effectively manage risk.
>
> b. With the implementation of SRP, our Army will shift from a regimented, event-driven resource strategy to one that is synchronized and fluid, with the overriding objective of maximizing the readiness posture of the total Army. The end state is an enduring process that allows the Army to clearly analyze and evaluate its progress, and provides the decision analysis capability to optimize resources and unit activity to minimize risk to the Army's mission.

Figure 45 shows the organizational structure associated with the requirements definition, funding submission, and execution of USA Fg. FORSCOM has the largest role, with Fg responsibility for all continental United States (CONUS)–based units and the hosting of the annual conference that ensures FORSCOM, USAREUR, and USARPAC requirements are aligned. All depot maintenance requirements and funding are managed separately by Army Materiel Command (AMC), but coordinated with the Fg planning of FORSCOM, USAREUR, and USARPAC.

As shown in Figure 45, each of these MACOMs submits its command's funding requirements into the Army POM process, and receives funding in its MACOM funding line to execute its Fg responsibilities.

Figure 45. U.S. Army Force Generation requirements and funding structure



Source: Discussions with U.S. Army G3/5/7 staff.

Comparison of readiness structures for Force Generation

Based on the information in the previous sections, Table 4 provides a comparison of the current and proposed Navy structures for the Fg phase of readiness with those of the other military services. The categories on the left in Table 4 are intended to provide a level of distinction between the organization that programs and executes the readiness funding—identifying alignment under operational or non-operational commanders

Table 4. Comparison of service Force Generation structures

	Current Navy Readiness Org	Single Navy Readiness BSO	Air Force Readiness Org	Army Readiness Org
Single Integrator for Programming who is not Operational	NAVAIR (Air Depots)	NAVAIR (Air Depots)	AFMC	AMC (Depots)
Single Integrator for Programming - Operational		FFC		
Multiple Commands for Programming - Operational	FFC & PACFLT			FORSCOM, USAREUR, & USARPAC
Funded through Single Command			AFMC	
Funded through Multiple Commands	FFC, PACFLT, and NAVAIR	FFC and NAVAIR		FORSCOM, USAREUR, USARPAC, and AMC
Execution done by Operational Commander(s)	FFC & PACFLT	FFC		FORSCOM, USAREUR, & USARPAC
Execution done by Commander who is not Operational	NAVAIR (Air Depots)	NAVAIR (Air Depots)	AFMC	AMC (Depots)

Source: Discussions with OPNAV, Fleet, Air Force, and Army staffs.

As described, neither the Air Force or Army constructs for Fg are consolidated, as proposed in the Single Readiness Integrator Framework. The Army structure for Fg readiness funds is very similar to the current Navy structure, with the exception that ship depots are funded by the Fleets. As with FFC and PACFLT, Army Fg readiness funds are programmed for and executed by FORSCOM, USAREUR, and USARPAC.

The Air Force is unique, using a service-wide corporate process to develop Fg requirements, which are then funded and executed by a non-operational executive agent, AFMC. As a non-operational commander, AFMC is seen as an "honest broker" in managing and distributing readiness funding—based on priorities established by

the CAM Executive Committee. Another key difference from the Navy model is that the Air Force does not have a tiered-readiness construct—i.e., all flying units with a particular T/M/S always have the same operational readiness and performance goals.

Even with these differences, the comprehensive, formulaic approach to establishing priorities at the start of each FY could serve as an exemplar for a more structured Navy process for execution-year prioritization. This approach, coordinated with OPNAV, Fleets, and NCCs, could enable a more uniform understanding of SECNAV and CNO priorities, providing for a more consistent application of readiness funding risk mitigation efforts during execution.

Former Fleet Commander Views

The CNA study team held discussions with current and former FFC and PACFLT commanders to get their thoughts regarding consolidation of the readiness funding under a single BSO. The study team met with eight former commanders, three of whom served as commander of FFC and also held positions as commander or deputy commander in PACFLT or PACOM; three current or former FFC commanders; and two current or former PACFLT commanders. Of these former commanders, two also served as CNO, and one served as VCNO.

Recommendations from commanders who have commanded only one of the Fleets were fairly uniform—with FFC-only commanders recommending consolidation, and PACFLT-only commanders not recommending consolidation. We list below what we believe are some of the common and most important comments from these discussions:

- Five commanders noted that strong, effective Lead TYCOMs are the most important piece to improving readiness—this opinion was shared by those who both supported and did not support consolidation
  - Lead TYCOMs must control all of their Type's resources and speak for the entirety of their TYCOM—in either the current or proposed organizational structures
  - Lead TYCOMs must have the trust and confidence of the Fleet commanders—or commander, if consolidated
  - Three noted that the SUBFOR/SUBPAC model is the most effective, based on the TYCOMs' unique operational roles and nature of the submarine community—Navy should see if there are lessons that could be applied in other TYCOMs
- When we noted that FFC currently has the proposed relationship with NAVEUR and NAVCENT, one commander noted that PACFLT was a completely different NCC—responsible for both Force Training and Generation versus just a Force Utilizer
- Three commanders commented that PACFLT unique requirements and priorities would not be well enough understood at FFC, resulting in

decisions that would negatively impact PACFLT's ability to support their readiness requirements and mission

- Four believe consolidation would result in a single individual with the responsibility, authority, and resources to provide combat-ready forces, bringing coherency to Fleet readiness decisions
- Two believe consolidation would increase FFC's span of control beyond their ability to manage, and would result in decisions that were not fully informed
- Four believe that consolidation would be seen, by both allies and adversaries, as the U.S. backing away from its commitment to the Pacific
- One commander noted that Joint Forces Command offers a valuable lesson in trying to consolidate too many responsibilities in one organization
    - Started with a clear mission—improving Joint training—but then more responsibilities were added, to include historically Joint Staff tasks, until it became cumbersome and inefficient, ultimately resulting in disestablishment
- One noted that if there were only one Fleet commander, he would be more likely to tell the CNO what would not be accomplished with a lower-than-required level of funding
- One commander commented on PACFLT's being both a producer and a consumer, and that it is hard for one organization to do both well
    - Opinions among those who advocated consolidation differed on the amount of realignment required, ranging from realigning all TYCOMs, NAVSEA, and NAVAIR resources under FFC to a variant of the FFC-proposed structure, but leaving all Hawaii- and Japan-based forces with ADCON of PACFLT
- Two commanders alternatively noted that being both producer and consumer was particularly beneficial in having the flexibility necessary to execute the PACFLT mission

Of the three Admirals who served in command positions in both FFC and either PACOM or PACFLT, two served as CNO, and one as VCNO. Two of these individuals recommended against consolidation, and the third indicated that there would be benefits from consolidation, but that PACFLT would have to be the champion for any proposed changes.

Our sense from these discussions is that there is a strong belief that the Lead TYCOMs are the key to coordinating efforts across the Navy Fleet, and that there is a need for increased visibility and synchronization of efforts on both coasts. The differences were mainly in the belief of whether FFC would be able to incorporate all current PACFLT readiness responsibilities, and whether it would ensure that PACFLT equities and unique requirements were fully represented and accounted for when decisions were made.

Analytic Approach for Evaluation

To evaluate the potential effects of consolidation on Fleet readiness, we use optimization models as a framework to synthesize historical readiness factors and to understand the feasibility of consolidating readiness funding. Based on discussions with the Fleets, we propose that the ultimate goal for readiness funding is to achieve OFRP, maximize combat readiness, ensure Fleet health, and maximize operational availability (A_o).

Optimization models

We use optimization models as the fundamental construct for identifying factors associated with achieving operational readiness. At the most basic level, we propose that the current structure consist of two separate organizations—the Fleets—each seeking to optimize their readiness within the resources they control, based on an "objective function" and "feasibility constraints," which we describe below.

Objective functions

King and Wallace describe objective functions in the following way: "The objective function of a mathematical program is what an optimization procedure uses to select better solutions over poorer solutions. For example, if the objective is to maximize profit, then the procedure tries to move in the direction of solutions that increase profit while still remaining feasible" [34].

With respect to optimizing readiness, we propose that the Fleet commanders each build an objective function, based on the Secretary of the Navy's (SECNAV) and CNO's guidance, area of responsibility (AOR) conditions, and their history and experience. We propose that these objective functions seek to provide the maximum attainable readiness, based on balancing across the four key components mentioned above:

1. Level of support for the Optimized Fleet Response Plan (OFRP), synchronizing as much as possible ship schedules to support aligned deployments

2. Level of combat readiness (CR)—achieving the highest possible likelihood of deployed forces to prevail in anticipated possible engagements

3. Degree of *Wholeness* (W), which we define as the near- and long-term viability and health of the weapon systems they possess

4. Level of operational availability (A_O) for assigned forces.

Within these dimensions, the Fleet commander must balance competing goals. For example, the Fleet commander must balance meeting workup (CR improving) and deployment schedules (OFRP achievement) with accomplishing desired maintenance (contributing to W, but possibly detracting from A_O). Furthermore, given resource constraints, some components must usually be prioritized over others. As described earlier, the difference in Fleet priorities is primarily during the year of execution—influenced strongly by both emergent funding requirements (e.g., repairs to the USS *Fitzgerald*) and the ongoing requirement to operate under a Continuing Resolution, based on not having an approved DOD budget.

In its most basic form, we state the Fleet commander's objective function as

$$OR = f(OFRP, CR, W, A_O)$$

As discussed earlier in this report, we believe that Fleet commanders also consider the implications of near- versus long-term readiness when they exercise their objective functions—for example, they do not delay ship availabilities to gain near-term A_O because of the effect it would have on future ship condition and ability to support the OFRP (unless it is mandated by operational necessity). A more complete discussion of this issue is included in the classified appendix to this report [30].

Feasibility constraints

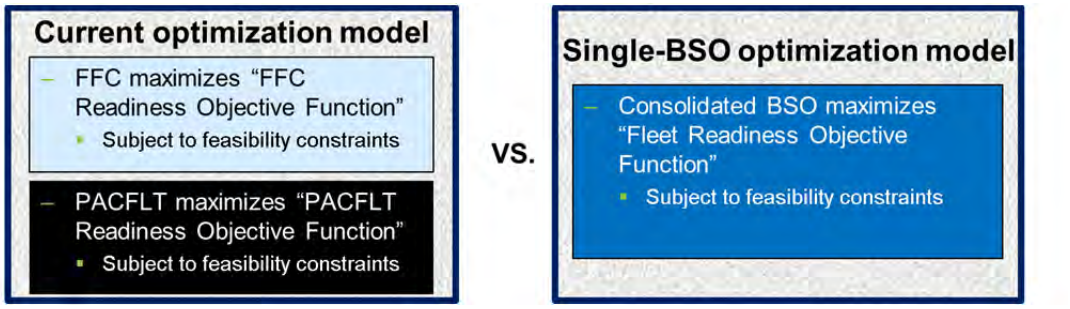
In optimization, feasibility constraints are the factors that bound the tradespace of possible solutions. Given that such factors as resources and depot capacity are constrained, commanders must attempt to maximize their readiness within these constraints.

Actions that relax these feasibility constraints result in a larger tradespace, making solutions that can improve the objective function—readiness—now available. These constraints include funding (both present and projected), the size and condition of the Fleet, the finite number of depot facilities and their throughput capacity, and limits introduced by current processes and availability of information.

Hypotheses

Figure 46 shows the two constructs to be evaluated, looking from the perspective of an optimization model.

Figure 46. Constructs to be evaluated—current vs. consolidated



Based on the Single Readiness Integrator Framework and the sponsor's requirements, the hypotheses are:

> ***Objective Function Hypothesis:*** Consolidating to a single BSO for readiness accounts would result in the formulation of a single, overall Fleet readiness objective function that increases Navy readiness and does not reduce responsiveness relative to the two separate objective functions.
>
> ***Constraints Hypothesis:*** Establishing a single BSO for readiness accounts will result in an increased decision tradespace that results in better overall Navy readiness and does not reduce responsiveness.

The next two sections will describe the current and proposed Single Readiness Integrator Framework constructs in more detail in the context of optimization.

Readiness optimization in the current Fleet structure

Using the general readiness optimization model from above, the current Fleet structure has two parallel Fleet readiness optimization models:

FFC Optimization

Maximize: $OR_{FFC} = f(OFRP_{FFC}, CR_{FFC}, W_{FFC}, A_{O\,FFC})$

Subject to feasibility constraints for FFC.

PACFLT Optimization

Maximize: $OR_{PAC} = f(OFRP_{PAC}, CR_{PAC}, W_{PAC}, A_{O\,PAC})$

Subject to feasibility constraints for PACFLT.

In this structure, each Fleet seeks to maximize the readiness of that Fleet. This optimal Fleet readiness depends on stated and perceived operational demands (both Navy and CCMD), GFM requirements, current and expected adversary threat capabilities, and geopolitical conditions.

In the current structure, the feasibility constraints in the two optimizations are not entirely separate. From a budget perspective, there is an overall feasibility constraint, and the total funding is divided into two separate constraints. In general, each Fleet operates within its individual resource constraint. However, the budgets can be re-allocated due to changing conditions through FMB processes. The extent to which those budgets can be reallocated depends on the information available to decision makers about the initial alignment of funding and the ability to work within the processes to achieve these trades. These processes might introduce frictions that limit the tradespace (information about the set of possible trades or the advisability of the trades across the BSOs is limited) or consume extra resources (labor and time) to facilitate the trades.

Readiness optimization in the proposed Single Readiness Integrator Framework

The Single Readiness Integrator Framework would result in a single optimization model.

Combined Fleet readiness objective function

Combined Fleet Optimization (Total Fleet)

$$\text{Maximize: } OR_{FLEET} = f(OFRP_{FLEET}, CR_{FLEET}, W_{FLEET}, A_{O\,FLEET})$$

Subject to feasibility constraints for Fleet.

This optimization has the same general form, but both the objective function and the feasibility constraints could change. There is one situation where this new objective function would be the same as the status quo. In the case that the current, separate objective functions are equivalent—because of either higher-level authority providing singular guidance or the coordination of the Fleet commanders—then decisions would be the same using the new objective function. Discussions and decision history, however, indicate that these conditions do not exist.

The objective function would become a Fleet-wide objective function, which may differ from the combination of the individual Fleet optimization problems for several reasons:

- The combined Fleet readiness objective function might take into account explicitly equalizing readiness priorities (such as deploying aviation squadron readiness), while the separate objective functions do not necessarily consider these cross-Fleet issues in a uniform manner.

- The objective function inherently depends on subjective evaluations of the relative importance of different aspects of the optimization environment. Different people can make different valuations of these aspects, just as different people value the features and cost of a car differently, leading to different choices in car ownership. Given the current processes in the Fleets, changing the individual who ultimately makes that judgment call changes the objective function, based on their priorities.

- One would expect that adding COMPACFLT inputs and the PACFLT unique conditions would in some way alter the current FFC objective function.

    - If FFC does not modify its current objective function based on COMPACFLT inputs and the inclusion of unique PACFLT conditions, it would imply that the current PACFLT objective function was not consistent with overall Navy readiness priorities.

Issues with comparing current structure to Single Readiness Integrator Framework for effects on readiness

Based on our discussions with personnel at both Fleets, there is currently no overarching Navy definition for readiness, nor any prioritization of the components of readiness. As a result, each Fleet commander seeks to maximize readiness based on their assessment of all factors involved. Given its responsibilities, FFC prioritizes attainment of OFRP and the availability of Navy forces to support the GFM—though CCMD demands far exceed Navy force availability.

Given its responsibilities and ongoing tensions in its AOR, PACFLT appears to prioritize combat readiness and the ability to conduct experiments and coalition exercises to maximize readiness for conflict and relationships with allies.

Because the Fleet commanders' objective functions are different, situation dependent, and undocumented, it is not possible to model them—either to develop a baseline for comparison or to evaluate how they would deal specifically with a given scenario of resource reallocation.

We do note, however, that the document developed to identify actions to be taken in FY 2017 [31], in case an appropriation bill was not passed, resulted in a very consistent and coordinated set of actions between the two Fleets. There were some differences for actions in May 2017, but all actions for June through September 2017 (e.g., standing down flying squadrons, reducing spare parts, delaying ship availabilities, etc.) were entirely aligned. This indicates that, under the current structure, this type of coordination between the OPNAV staff and the Fleets can result in a shared sense of priorities and areas in which to take risk.

Readiness metrics

As noted above, a quantitative evaluation of the proposed consolidation's effects on readiness is not possible, because there is no common definition of what constitutes readiness, nor a prioritization of the components that represent readiness (i.e., OFRP, CR, W, and A_O). For these reasons, in this section we identify metrics and provide qualitative assessments as to how they may be affected by consolidation of readiness account funding. We provide these metrics in three categories: readiness, responsiveness, and efficiency.

With respect to readiness, we evaluate the four components identified earlier: attainment of the Optimized Fleet Response Plan (OFRP), combat readiness (both near- and long-term), Wholeness, and operational availability.

It is also important to note that decisions to increase near-term readiness could result in decreased readiness in the long term. As an example, deploying surge status ships can increase current deployed A_O, but that may decrease the availability of that ship to support future A_O deployment requirements. Another example is that deferring a ship availability could make resources available to increase flying squadron training and readiness ratings (T-ratings), but may result in fewer ships available and/or in poorer material condition in the future. Each Fleet's objective function should therefore be influenced by the Fleet commander's desire to maximize readiness both now and in the future.

OFRP

We identify three metrics related to assessing OFRP:

- GFM support
- Depot cost and schedule growth
- Stability of shipyard availability.

The Global Force Management (GFM) process is currently conducted in a unified fashion, led by FFC, in accordance with its MF&T in OPNAVINST 5440.77B [14]. Given the high priority for this objective, we do not believe that either the process or the resulting forces available would change if consolidation were implemented.

The second metric deals with cost and schedule growth associated with maintenance depot availabilities. Historically, actual costs and schedules have exceeded programmed values. Improving the accuracy of depot maintenance cost and schedule forecasts would allow more accurate planning and reduce the number of execution-year changes that would be required, improving the ability to execute planned deployments. Because the FFC proposal would realign only one ship maintenance depot (Puget Sound NSY), and the fact that there is currently strong interaction between the two Fleet N43 offices, we believe that there would be minimal changes to cost and schedule growth that directly result from consolidation of BSOs. Additionally, there are a large number of Ship Maintenance Executive Council (SMEC) and maintenance deep-dive actions currently being implemented to improve these estimates, and it would not be possible to determine if changes to depot cost and schedule growth were due to consolidation or, more likely, to other ongoing actions.

The third metric would evaluate the stability of shipyard execution. By assessing actual work performed versus planned, the Navy could determine whether the shipyards were better able to execute their mission. As with the second metric, ongoing SMEC and maintenance deep-dive efforts, in conjunction with significant hiring of additional depot personnel, would again make it extremely difficult to assess whether any improvements were due to consolidation or to these other external factors.

Combat Readiness (CR)

We identify six metric groups related to assessing CR:

- Defense Readiness Reporting System–Navy (DRRS-N) ratings
- Aircraft Mission Capable (MC)/Fully Mission Capable (FMC)/Out of Reporting (OOR) rates
- Aviation Training & Readiness ratings (T-ratings) for deployed and surge forces
- Ship Steaming Days, actual versus planned
- Performance ratings from workup events
- Priority exercises and experiments completed.

DOD Directive 7730.65, *Defense Readiness Reporting System (DRRS)* [35], notes that "DRRS provides a means to manage and report the readiness of the DOD and its subordinate Components to execute the National Military Strategy (NMS)." The Navy implementation is through DRRS–Navy (DRRS-N), with guidance provided in OPNAVINST 3501.360A [36], *Defense Readiness Reporting System–Navy,* and Navy Tactical Reference Publication 1-03.5 (NRTP 1-03.5), *Defense Readiness Reporting System-Navy Reporting Manual* [37]. Historical tracking of DRRS-N ratings, which reflect readiness estimates, could be compared with steaming hours and flight hours per OFRP phase to provide insight into the relationship of these values to readiness.

Insight into aviation CR can be measured by the percentage of aircraft, by T/M/S and Fleet, that are rated as MC, FMC, or OOR. MC and FMC and reporting requirements with respect to Subsystem Capability and Impact Reporting (SCIR) are defined in COMNAVAIRINST 4790.2C, *The Naval Aviation Maintenance Program* [38], chapter 17, "Aircraft Material Condition Readiness." These rates show the percentage of time aircraft are either FMC or Partially Mission Capable (PMC). In addition, reviewing the number of aircraft that are OOR, by T/M/S and Fleet, provides information on what percentage of each Fleet's aircraft is available to support taskings. Given the large number of external factors (e.g., spare parts funding, parts fill levels, maintenance billet Fit/Fill rates, etc.), however, it would be very difficult to determine whether changes in these metrics would be due to consolidation.

Tracking of aviation T-ratings, by phase of the OFRP, provides insight into the CR of the aviation units, and could highlight effects from high ops tempo or differences between Fleet priorities. Comparing actual T-ratings against expected or planned levels can provide insight into developing future deployment schedules or planned levels of funding required in the future.

In addition to DRRS-N ratings, insight into Ship CR can be gained through a comparison of actual versus programmed steaming hours, by ship class, OFRP phase, and Fleet. We would expect the alignment of actual hours to programmed hours to be consistent with DRRS-N ratings, but further investigation would need to be conducted to understand underlying reasons if the rates were not consistent.

CR for deploying units (e.g., carrier strike groups, or CSGs) could be assessed by the results from key evaluations during the workup period: Composite Training Unit Exercise (COMPTUEX), Joint Task Force Exercise (JTFEX), and Undersea Warfare Exercise (USWEX). These evaluations should be consistent across both Fleets, with results indicating the unit's level of readiness.

In addition, the number of other priority exercises (e.g., Saxon Warrior, Rim of the Pacific (RIMPAC), etc.) and Fleet experiments scheduled and accomplished indicates a level of CR and, in many cases, coordination with the naval components of our allies. Thus, tracking of the number of priority exercises and events scheduled versus accomplished, and the validation of the priority of these events can provide insight

into both the allocation of resources and the attainment of the objectives of these events.

Wholeness (W)

Wholeness is intended to provide deeper insight into the overall health and condition of the Fleet. Some of these metrics (e.g., Not Mission Capable, Supply, or NMCS) can affect the CR metrics (e.g., FMC), but the intent is to look more globally at all Fleet assets to understand how Fleet health may be changing. We recommend three main metric areas for this assessment:

- Aircraft NMCS; Not Mission Capable, Maintenance (NMCM); Partial Mission Capable, Supply (PMCS); and Partially Mission Capable, Maintenance (PMCM) rates
- Ship casualty report (CASREP) and Current Ship's Maintenance Project (CSMP) discrepancy counts
- Aviation T-ratings for forces not deployed or in surge status.

Operational Availability (A_O)

With respect to A_O, we recommend a detailed evaluation of planned A_O levels versus what was actually achieved, starting with estimates from two years prior, to evaluate changes realized in the current A_O and then out over the next 24 months. These evaluations, done for each of the major A_O categories in the Integrated Fleet Readiness Report (IFRR), would identify the causes for any changes realized and identify risks to future A_O estimates. Although A_O is affected by many external factors the Navy cannot control (e.g., congressional appropriations, world events, etc.), these evaluations could inform internal Navy resource decisions based on historical trends.

Table 5, compiled from the OPNAV N83 readiness funding to capability forecasts—nicknamed the "Chicklet Charts"—shows how the forecasted A_O levels for CSGs[9] changed, by FY, from PB16 to PB17 and PB18. Because there was significant change due to many factors (such as delayed depot availabilities), even with a stable organizational structure it would be difficult to assess any actual effect on these

[9] Navy ship and submarine A_O values are stated in an "X+Y+Z" format, where *X* is the number of ships deployed, *Y* is the number of ships deployable within 30 days, and *Z* is the number of ships deployable within 90 days.

forecasted levels that was directly due to consolidation. Additional data from the N83 Chicklet Charts is included in Appendix G.

Table 5. Comparison of projected CSG A_O from PB16 to PB18

	FY16	FY17	FY18	FY19	FY20	FY21	FY22
CSG FRP Ao - PB16	2.5+0.4+0.7	2.6+0.3+0.8	2.2+0.2+0.7	2.3+0.4+0.7	2.6+0.3+0.8		
CSG FRP Ao - PB17		2.7+0.9+1.3	1.9+0.4+1.6	2.6+0.8+1.5	2.1+0.6+1.4	2.5+0.8+2.1	
CSG FRP Ao - PB18			1.8+2.2+1.5	2.0+1.3+1.5	1.9+0.6+1.1	2.0+0.6+2.3	3.0+2.0+1.6

Source: OPNAV N83 "Chicklet Charts" for PB16, PB17, and PB18.

Summary readiness matrix

Table 6 shows a summary of these metrics with an assessment of whether consolidation effects would improve (+), degrade (-), are neutral (0), or are unknown (?). As shown, the large number of external factors affecting these metrics, and the historical degree of variation make it impossible to assess the effects of consolidation and an inability to determine the cause of any changes. Thus consolidation's potential effects on readiness are assessed predominantly as unknown, and it is not anticipated that a pilot would provide clear results. This is because any changes in outcomes could not be tied directly to the pilot, rather than influences such as budgets, geopolitical events, or unexpected requirements resulting from accidents. For these reasons, we believe a pilot would have limited value as an indicator of the effects of consolidation.

Table 6. Readiness metrics assessment summary

Category	Metric	Assess	Comments
OFRP	GFM Support Depot Cost/Sched Growth Ship Yard Availability Stability	0 ? ? / 0	Unchanged SMEC/Maint Deep Dive Actions Depot Staffing Increases Only one Shipyard Transferred
Combat Readiness	SORTS Aircraft MC/FMC/OOR Steaming Days vs. Planned Deployed/Surge T-Ratings COMPTUEX/JTFEX/USWEX Perf Priority Exercises/Experiments Completed	? ? ? ? ? ?	Affected by External factors— Aviation Depot Staffing Increases Resources – Funding/Personnel Operational Demands
Wholeness	Aircraft NMCM/NMCS/PMCM/PMCS Ship CASREPS/CSMP Discrepancies Non-Deploy/Non-Surge T-Ratings	? ? ?	Affected by Resources – Funding/Personnel Operational Demands
A_O	A_O Actual/Projected	?	Difficult to predict if changes woud be due to consolidation
Legend for Anticipated Effect	+ = Improved	0 = Neutral	- = Degraded ? = Unknown

Combined Fleet feasibility constraints

The other factor of our optimization model framework is constraints—those conditions that limit the objective function's solution set. For instance, readiness may be calculated to be improved by increasing depot throughput, but is ultimately limited by the maximum possible production of the depots. If an existing constraint could be relaxed, it would increase the tradespace available to the objective function and permit a wider solution set to the optimization model.

The feasibility constraints in the new objective function differ from the feasibility constraints in the separate optimizations. First, there is a single budget constraint for each SAG, rather than one for each BSO/SAG combination. Even though funding can move between the two Fleet BSOs in the current organizational structure, there is an inclination for each Fleet to solve its problems within its own budget, which might restrict the choices or sub-optimize decisions.

Second, the constraints are strongly dependent on the information available. Consolidation could make more information available to a single decision maker about how resources are intended to be spent and how actual execution is progressing. This additional data might expand the set of potential combinations of allocations considered for execution, and thus enable the single commander to choose to allocate resources in a way that improves Fleet-wide outcomes. Alternatively, consolidation could result in too broad a span of control or a situation where the single commander does not receive all of the information necessary to support Fleet-wide decisions.

Third, the constraints incorporate the processes that are used to make and execute decisions. In the combined optimization, the BSO will require information to be transmitted from the individual activities, and decisions to be transmitted back to the individual activities. Providing information on the implications of potential decisions to the other Fleet, which is not done in the current organizational structure, imposes an extra requirement and potential for friction. Furthermore, the ability to correctly and accurately transmit this information is uncertain. This reinforces the need for clear business rules and processes to be defined prior to consolidation of funding.

In our discussions with Fleet personnel, eight main constraints were identified that affected the Fleet's ability to maximize readiness:

1. Funding lower than needed to meet all requirements
2. Continuing Resolution funding constraints restricting availability of anticipated funding

3. New 2017 restriction: requiring prior congressional approval before moving more than $15 million out of SAG 1A1A, 1B1B, or 1B4B accounts
4. Depot capacity limits
5. Lack of funds transparency between the two BSOs
6. Fleets optimizing based on their portion of SAG (e.g., 1A1A) funds versus having entire Fleet SAG funding to allocate more efficiently
7. Differences in tracking and reporting of Fleet metrics
8. Conflicting Fleet priorities for depots.

Representatives from both Fleets also mentioned the Navy's Financial Improvement and Audit Readiness (FIAR) process as a constraint that should be considered. FFC personnel believed consolidation would benefit FIAR through consolidation of funds into a single account for tracking. PACFLT personnel believed that consolidation would complicate FIAR, as it would require additional effort to distinguish ongoing efforts from prior BSO 70 funding from new efforts at the same locations with BSO 60 funding. We discussed these issues with personnel in the DON Office of Financial Operations (FMO), and they noted that they did not believe consolidation would either improve or degrade FIAR efforts. For this reason, we do not include FIAR as a constraint in our analysis.

Evaluation of Single Readiness Integrator Framework to relax constraints

Of the eight constraints identified, we assess that consolidation would have no effect—positive or negative—on the first four listed (lower funding than required, Continuing Resolutions, new congressional $15 million threshold, and depot capacity). This assessment is based on the fact that these constraints are either beyond the DON's control or ar due to physical limitations (e.g., the number of ship dry docks). The perceived benefits with respect to consolidation relaxing each of the remaining four constraints are discussed below. For each constraint, we provide an assessment of anticipated effects and identify if there are alternatives to consolidation that could also relax the constraint.

Lack of funds transparency between the two BSOs. FFC asserts that consolidating to a single BSO would provide complete visibility into all Fleet readiness funds, and that the existing FFC reporting structure will publish summary information that informs OPNAV, PACFLT, and the NCCs.

- Consolidation would result in FFC having complete visibility of all SAG 1A1A, 1A2A, and 1B1B funds, along with the majority of SAG 1B4B funding. The level to which data would be visible/transparent to OPNAV and PACFLT would need to be clearly defined, but it would be easier to access and report if all readiness funding is in one BSO. Many of the benefits from consolidation could, however, be realized through increased transparency in the current BSO accounts and standardized criteria and metrics for reporting. These metrics could include

  - Quarterly reports on programmed versus executed obligations and expenditures, by ship class, T/M/S, Fleet, and OFRP phase.

  - More detailed reporting and trend analysis of readiness funds by SAG/special interest (SI) code—e.g., 1A1A/FF, Flying Hours–Fuel; 1A1A/FM, Flying Hours–Maintenance; 1B1B/SR, Ship Operations–Repair Parts; 1B1B/SF, Fuel; etc.

  - More detailed information provided regarding funds in the less specific OMN SAG/SI codes—e.g., 1A1A/FO, Flying Hours–Other; 1B1B/SX, Ship Operations–Ship Administration; 1B1B, and Ship Operations–Other OPTAR.

Fleets optimizing based on their portion of readiness funds. Consolidating all Fleet readiness SAG funding into a single account would allow funds to be reallocated between AORs based on a single Fleet commander, without the need to request FMB to transfer funds.

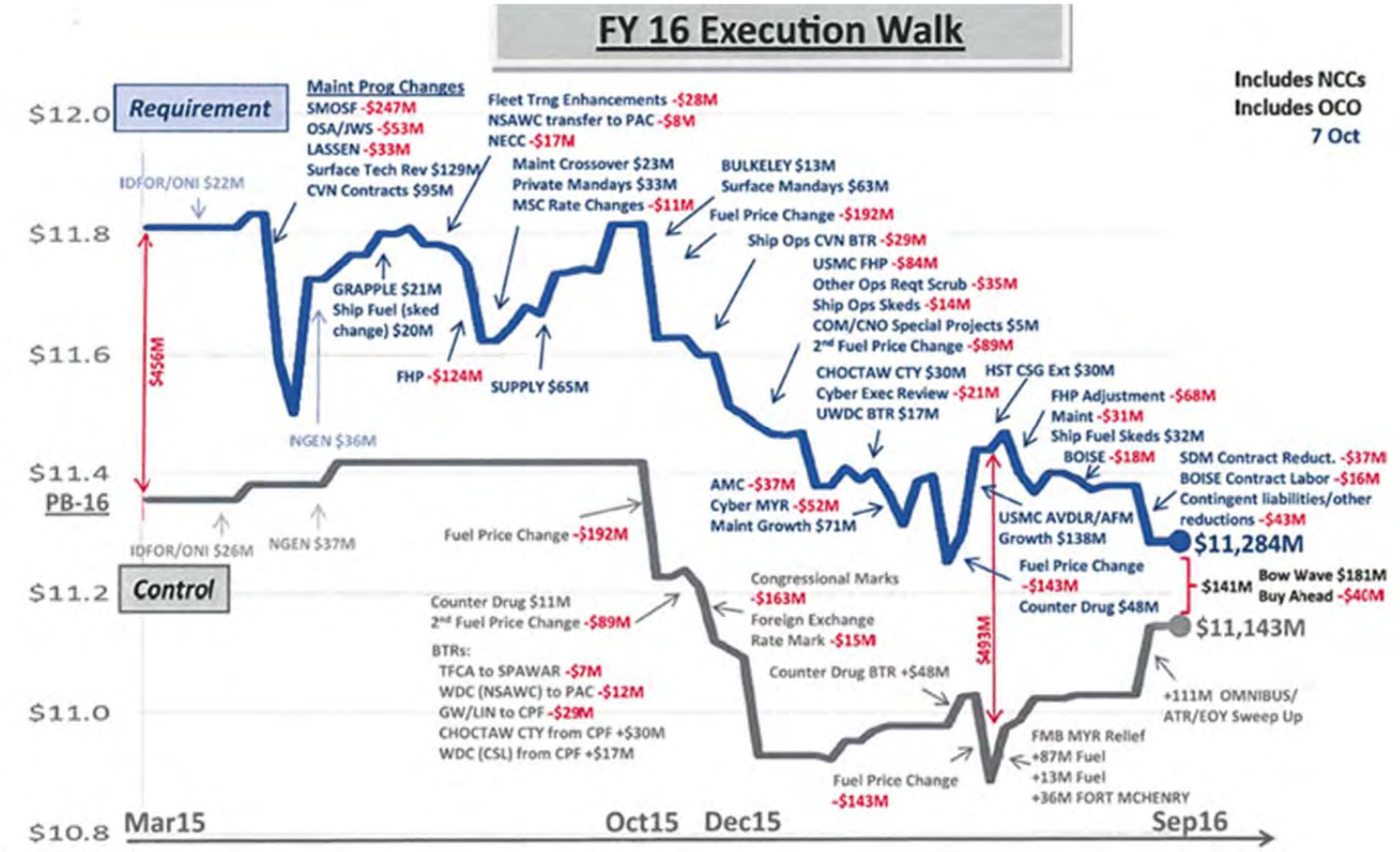
- Consolidation would result in a single Fleet objective function determining priorities and risks, which could then result in reallocation of a specific SAG's funding between the units that are currently in BSO 60 and BSO 70. We believe consistent application of priorities would result in a more balanced level of readiness across the Fleet, but we also believe that, as reflected in the "Monthly Mitigation of Fiscal Year 2017 Navy Afloat Readiness Shortfalls" document [39], that coordinated Fleet priorities could be generated in the current Fleet construct, with strong participation from the Lead TYCOMs. Institutionalizing these priorities at the beginning of the FY, with CNO or VCNO as the arbiter when there are disagreements between the two Fleet commanders, would provide for more uniform approaches to Fleet readiness, with some level of differences (when required by circumstances) between the two Fleets. We also note that the establishment of these priorities is complicated when having to operate under a Continuing Resolution (versus having an Appropriation Act), given the funding restrictions that are imposed.

Differences in tracking and reporting of Fleet metrics. FFC proposed that the realignment to Lead TYCOMs with detachments, under FFC ADCON, will result in a single set of metrics and reporting formats, which will improve transparency and provide a single, comprehensive view of Fleet capabilities and performance.

- FFC has stood up an office under the Executive Director that tracks and analyzes FFC metrics, to include financial metrics. Summary-level information is published each year in a Fleet Forces Command Annual Report [33]. Financial metrics include five-year comparisons of FFC requirements versus execution, and a current FY "Execution Walk" that tracks funding control of all FFC readiness accounts to the requirement across the FY (Figure 47).

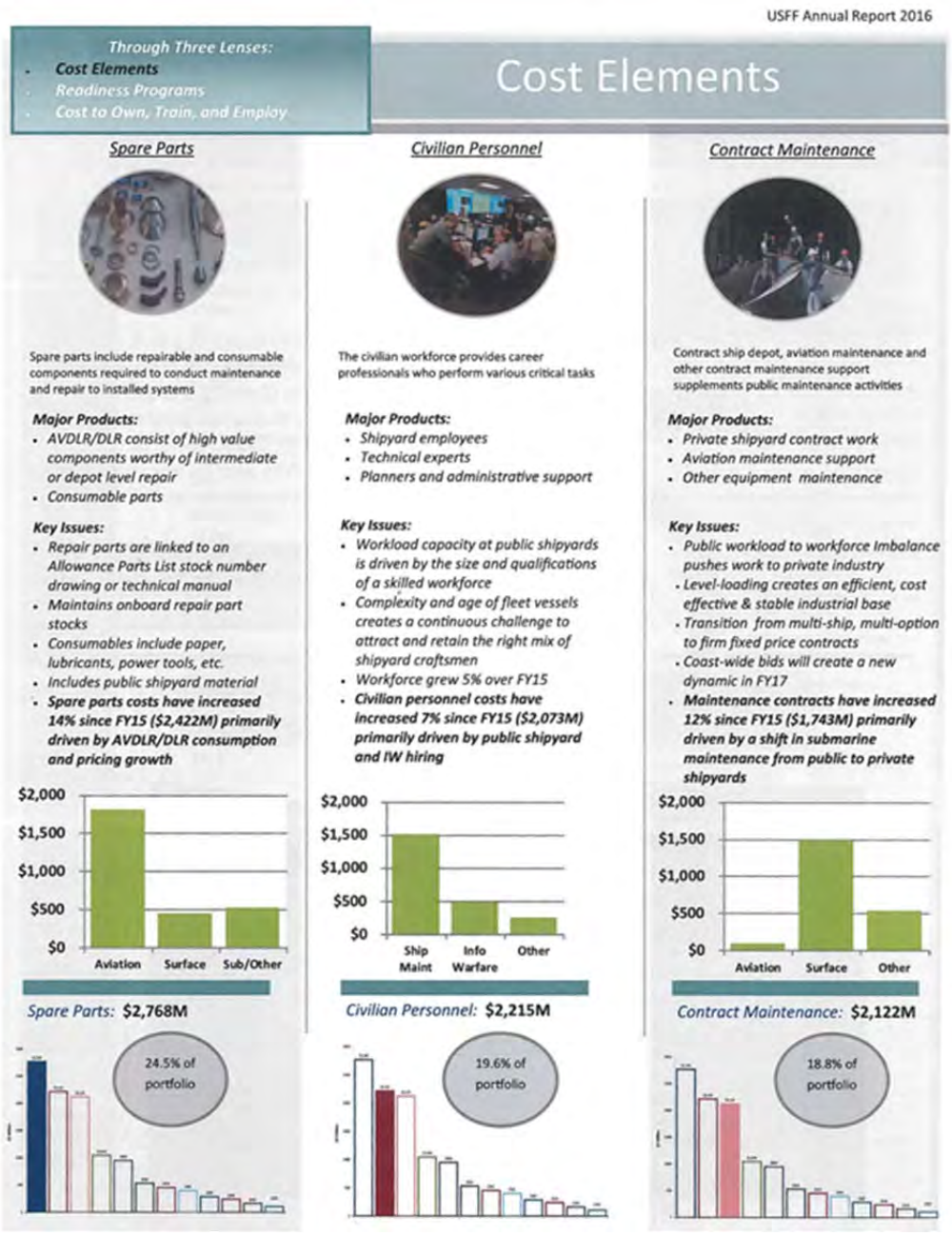
- Additional examples from the FFC Annual Report for 2016 are shown in Figure 48 (cost elements example) and Figure 49 (air operations metrics example).

Figure 47. FFC FY 2016 total readiness funding "Execution Walk"



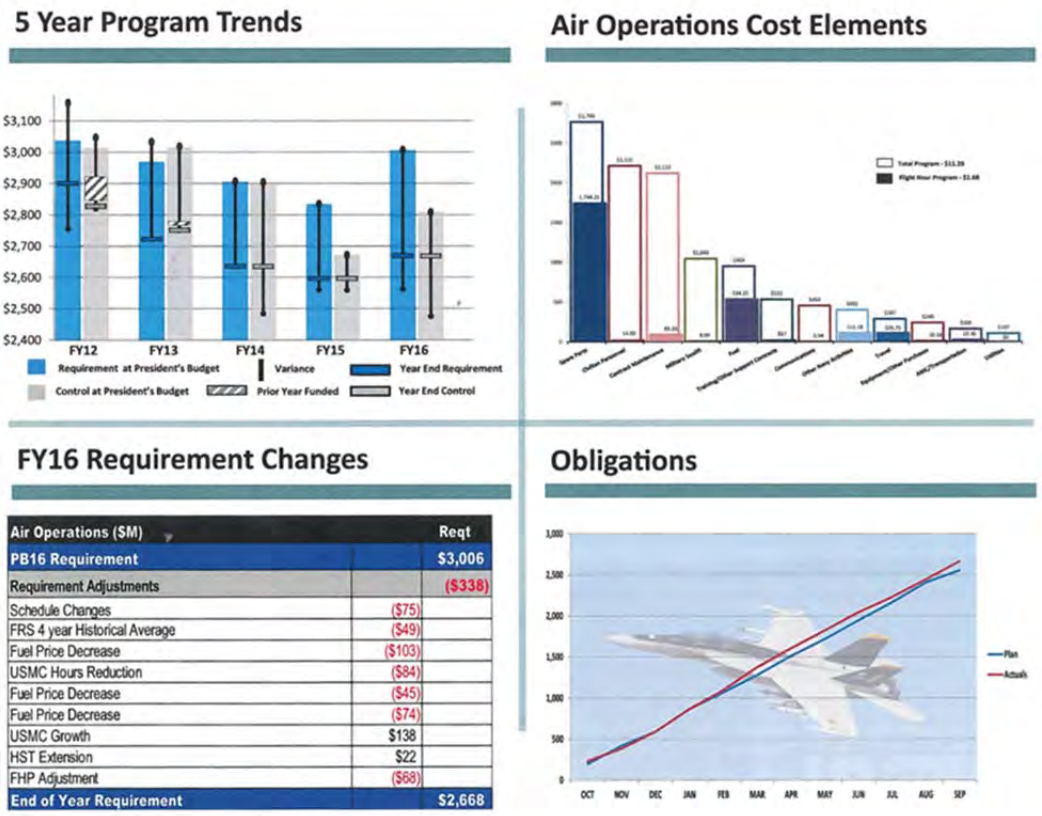
Source: U.S. Fleet Forces Command Annual Report 2016 [33].

Figure 48. Example of FFC cost elements summary data



Source: U.S. Fleet Forces Command Annual Report 2016 [33].

Figure 49. Example of FFC air operations summary data



Air Operations ($M)		Reqt
PB16 Requirement		$3,006
Requirement Adjustments		($338)
Schedule Changes	($75)	
FRS 4 year Historical Average	($49)	
Fuel Price Decrease	($103)	
USMC Hours Reduction	($84)	
Fuel Price Decrease	($45)	
Fuel Price Decrease	($74)	
USMC Growth	$138	
HST Extension	$22	
FHP Adjustment	($68)	
End of Year Requirement		$2,668

Source: U.S. Fleet Forces Command Annual Report 2016 [33].

In discussions with FFC personnel, they indicated that there had been a higher level of visibility/transparency into PACFLT data in FY 2016, but that PACFLT provided less information in FY 2017. For this reason, the FFC Annual Report is done only for FFC's BSO 60 readiness funding—though they indicate that they would like to provide summary information for all Fleet readiness funding.

When we spoke with PACFLT, they noted that they had stopped providing some data to FFC, because FFC changed the data that PACFLT had provided, since FFC incorrectly interpreted the data. The PACFLT data reported by FFC was thus inaccurate. We recommend standardized data criteria and processes be implemented, with Lead TYCOMs given the responsibility to ensure that data reported is consistent across the Navy Fleet. This would ensure consistency of reporting and added visibility and transparency at both the Fleet and OPNAV levels.

Conflicting Fleet priorities for depots. Consolidation would allow for a single voice to NAVAIR and three of the four NSYs on Fleet priorities and expectations, which

would eliminate potentially conflicting guidance and could result in improved efficiency.

- This is the one constraint where there is not an alternative method that would provide the anticipated benefit—a single Fleet interface to these depots. We would anticipate a small additional effect, however, from the single Fleet interface for three reasons: (1) only one ship depot (PSNSY) would be realigned; (2) the high level of oversight and actions being taken as a result of the SMEC, the Fleet Commanders readiness Council (FCRC), and the maintenance deep-dive activities already at work to align direction; (3) the continued management of the aviation depot priorities by the NAE, with funding and execution by NAVAIR; and (4) the already high level of coordination between the FFC N43 and PACFLT N43 offices to synchronize depot efforts.

Summary of relaxation of optimization constraints

Table 7 provides a summary of the four constraints, and highlights where potential consolidation benefits may be available through alternative actions. As shown, many of these perceived benefits could be achieved within the existing structure.

Table 7. Evaluation of relaxation of optimization constraints

Constraint	Proposed Benefit to Relax Constraint	Consolidation	Possible through other actions	Comments
Lack of funds transparency between the two BSOs	Consolidated BSO would have visibility of all Readiness funds	X	X	Information to support decisions based on entirety of Readiness funds. But this could also be achieved through improved communication/ processes in current Fleet construct
Fleets optimizing based on their portion of SAG (e.g., 1A1A) funds vs. having entire Fleet SAG funding to allocate more efficiently	Ability to allocate SAG funds between Coasts based on need, vs. LANT/PAC division	X	X	Funding transfers into/out of each Fleet's SAGs do not appear to indicate funds imbalance. Better transparency, with TYCOMs advocating changes to Fleet commanders, could also be implemented through FMB in current Fleet construct
Differences in tracking and reporting of Fleet metrics	Better insight regarding Execution across Fleet, allowing better decisions on Funding distribution/ allocation	X	X	Standard tracking and reporting metrics could be developed and implemented in current Fleet construct
Conflicting Fleet priorities for depots	Single determiner of depot priorities	X		Anticipate small additional effect given depot capacity constraint, SMEC actions, and current level of coordination between Fleet N43 offices
Consolidation would relax constraints, increasing trade-space, but the majority of benefits could also be realized through process improvements.				

Responsiveness

In evaluating responsiveness, we consider both timeliness (the time required to make a decision regarding readiness) and the quality of the decisions. Because quality of decisions is subjective, we extend our consideration to the quality of information required to support that decision. To address the potential impacts of consolidation with respect to both general readiness issues and PACFLT's ability to support PACOM, we assess the impacts in terms of timeliness and quality of decisions separately.

Timeliness

Timely responses to issues are important in responding to emerging circumstances. In some cases, decisions must be made quickly as a result of fast-changing conditions. In others, decisions can be made in a more deliberate manner. For such things as experiments and exercises, even though there is more time to deliberate, deadlines are still important—particularly for activities with coalition partners.

Where COMPACFLT now has the authority and resources to make both fast and deliberate decisions, under consolidation these decisions would need to be approved by FFC. This will require additional coordination time as well as the identification of processes regarding how these issues will be coordinated.

The current FFC process for managing forces and resources is a structured "battle rhythm," where COMUSFLTFORCOM meets on a regularly scheduled basis with each of the TYCOMs, and the FFC staff gathers, or develops, the necessary products to support resource allocation decisions. This process has been in use for many years and provides a standardized approach for decision making. How, or whether, this process should account for PACFLT-specific issues or permit the support of urgent resource requirements in the PACFLT AOR (e.g., the USS *Fitzgerald* and USS *John S. McCain* collisions) has not been specifically defined. Defining how FFC would ensure timeliness for both staffing and decision making with respect to PACFLT AOR requirements would be beneficial to ensuring that the FFC battle rhythm would be responsive to these new responsibilities.

The other aspect that could affect timeliness is COMUSFLTFORCOM's span of control. Per OPNAVINST 5440.77B [14], he currently has 18 direct reporting commanders, in addition to his FFC staff direct reports. Although the proposed structure would not increase the number of direct reports, as the current Follow TYCOMs would become detachments under the Lead TYCOMs, it would introduce a broader span of control

and responsibilities, along with the need for these new detachments to work through the Lead TYCOMs versus going directly to the Fleet commander.

Quality of decisions

FFC has a structured set of standardized processes and meetings—its "battle rhythm"—to support decisions, and it believes this current model for managing Navy forces and resources within its AOR can easily integrate PACFLT responsibilities and management with no additional staffing at FFC headquarters. It also believes that there would be no requirement to change the current staff hours at FFC headquarters.

We would, however, anticipate the need for some processes and data systems to be modified to accommodate PACFLT unique situations and the fact that adding the PACFLT resources would more than double the resources that FFC would be responsible for. Clearly identifying how these new data would be gathered and managed, and establishing business rules regarding these data and decision processes prior to any consolidation, would greatly benefit both Fleets, in terms of ensuring necessary data is available to decision makers, and in establishing transparency and trust. Overall, both Fleets agree that there would be fewer staff required under the Single Readiness Integrator Framework, but the level of these efficiencies has not been jointly determined.

FFC's proposed approach assumes the realignment of some PACFLT MHQ personnel at Pearl Harbor Naval Base, Hawaii to FFC—remaining physically located in Hawaii—and the use of TYCOM staffs to provide the level of PACFLT-specific knowledge required to make resource allocation decisions. As with timeliness, it would be beneficial to further define how FFC processes specifically would be modified and what data would be passed, and the frequency of transmission. FFC's current processes are designed to address NAVEUR and NAVCENT requirements, but it is difficult to believe that they can seamlessly integrate the scope of PACFLT, with 60 percent of the total Navy Fleet and the majority of all Fleet readiness funding, with no changes.

Should further action be considered regarding consolidation, we recommend that well-defined processes and business rules be coordinated and approved prior to any actions. We also believe, given the difference in the current Fleet commander objective functions, that if the FFC objective function is not modified, then COMPACFLT will often perceive a negative impact to the quality of decisions made by FFC.

Responsiveness metrics

In this section, we define metrics that address the two dimensions of responsiveness: timeliness and quality of decisions. For timeliness, we present an objective measure, and discuss its limitation. For quality of decisions, we identify five categories that might be appropriate, with one direct measure (Appeals to CNO) and four indirect measures that consider the inputs to decisions: Visibility/Transparency, Span of Control, Standardization, and Decision Processes.

Timeliness of decisions

A straightforward measure of timeliness is the time between when a need is identified and when the decision is made and conveyed to the relevant parties of how that need will be addressed. Care must be taken to define who has identified the need—it could be the unit (ship or squadron), the TYCOM, or the Numbered Fleet commander. Lower-level decision making may be desirable, because the system employed by the decision maker is important, and might affect the incentives and actions taken by the lower-level units. However, they also make the metric less directly a reflection of the consolidation's highest-level organization. It is possible to define two (or multiple) metrics to capture the varied aspects. In addition, the types of decisions that will be tracked and recorded need to be identified early. Past decisions of importance will help inform this set of decisions.

While this is a direct measure of timeliness, its usefulness in comparing one BSO organizational structure to another might be limited, because we would not have a valid counterfactual (what would have happened under the status quo structure), and consistently determining start times would be difficult. The ability to project what the time would have been under the status quo would depend on how closely the new process matches situations from the past. Because the decisions themselves are likely to be unique, and the circumstances likely to be different from previous situations, these projections may not be valid. For these same reasons, it might also not be useful to compare the current time to make decisions in one Fleet with the other.

To use this metric would also require establishing a standard on what speed is needed; we would not want to evaluate an early decision in a deliberative situation as particularly beneficial if little is gained from making the decision early. Conversely, the metric must capture whether a fast decision is made when required.

Quality of decisions: Appeals to CNO

Direct measures of the quality of decisions are difficult. Because the decision about the right allocation of resources is often subjective and based on the commander's evaluation of priorities, the standard for decisions would have to be based on an

authoritative decision maker's choices. Therefore, the best direct measure is how closely the commander's decisions align with those that the CNO—the ultimate authority—would have made given full information. Thus, we need to know what the CNO would have done in that situation. The second best would be the CNO's decisions given the information that is available. Both of these cases, however, would impose a significant burden on the CNO, which could be impractical.

A valid measure of quality of decisions could also be the number of times that a Fleet or Numbered Fleet commander submits an appeal to the CNO regarding the consolidated BSO commander's decisions, and the number of times the CNO reverses these decisions. This would be an indicator of the number of decisions that were not aligned with overall Navy readiness priorities. While we again would not have a counterfactual available, we might be able to assume that reversed decisions would have originally been different, because the appealing Fleet commander disagrees. Similarly, appealed decisions that the CNO upholds are a measure of decisions that were aligned with overall Navy readiness priorities. Decisions that are not appealed might be assumed to be the same as under the current structure. We suspect that the number of items that are appealed would be small, so there might just be a small body of this type of information.

Thus we identify two metrics for quality of decisions related to conflicts over priorities that would be indicated by appeals to the CNO:

- Number of decision appeals to CNO
- Number of overturned decisions.

Visibility/Transparency

There are also indirect metrics that could measure characteristics of the quality of decisions. The first would address a current constraint identified by FFC—the lack of transparency with respect to funding data for the PACFLT readiness funding accounts. FFC sees consolidation as a way to ensure this transparency regarding readiness funds, permitting them to track execution and adjust funding levels across the Fleet as needed. Although this consolidation would provide FFC with complete oversight and visibility, it would result in less visibility for PACFLT with respect to both Fg and Fe funding. The funding visibility that would be provided to PACFLT and its ability to influence FFC funding decisions has not been defined, and PACFLT is concerned that the process for readiness funding decisions might be "opaque," as it sees the current staffing decision process overseen by FFC.

With respect to funding visibility at the OPNAV level, consolidation would eliminate the need for accomplishing BTRs when moving funds within a readiness SAG, removing FMB from coordinating what are now transfers between the BSOs. Thus it is assumed that there would be less funding information provided by FFC to FMB and

OPNAV, unless specific reporting requirements are identified. We believe consolidation would improve the ability of FFC to make decisions unilaterally and realign funding, but these decisions will be based on the COMUSFLTFORCOM's objective function and the degree of information available at FFC, with lesser participation by PACFLT and OPNAV.

In our discussions with personnel in both Fleets, they indicated that they see the OPNAV staff, with the exception of FMB, as completely focused on POM, future-year, and acquisition issues—and not interested in the execution-year operational costs. In discussions with the OPNAV staff, they indicated that they did not receive the degree of information from the Fleets that they believe they need to fully assess performance and future-year requirements, though FFC was noted as providing more information than PACFLT, including more detailed supporting information.

Thus, we identify three subjective metrics that would contribute to good decision making:

- Increased visibility/transparency at FFC
- Increased visibility/transparency at PACFLT
- Increased visibility/transparency at OPNAV.

Span of control

Consolidating the Fleet readiness accounts and realigning the TYCOMs would increase the span of control for both the FFC commander and the FFC staff. As discussed in the earlier section on span of control, COMUSFLTFORCOM currently has 18 command relationships identified in its MF&T [14], in addition to the FFC MHQ staff. Although the number of reporting TYCOM commanders would remain the same, their responsibilities would be increased. In addition, the FFC staff would be responsible for forces around the globe and more than double the size of the current Fleet they manage. For these reasons, we believe consolidation would have some level of negative effect with respect to span of control, and that new business rules and some level of modification to current processes would be required.

Span of control can be measured by

- COMUSFLTFORCOM responsibilities
- FFC staff responsibilities.

Standardization

Consolidation would result in standardization of readiness decisions and priorities across the Fleet. All decisions would be made using the FFC Fleet-wide objective

function, informed by inputs from PACFLT, NCCs, TYCOMs, and the FFC staff. Because the objective function is not defined and the priorities are not documented, the effect of standardization on overall Navy and PACFLT readiness is not known. If the FFC objective function is better than PACFLT's, and FFC has all of the information necessary to make a decision, this would result in decisions that best support Navy readiness. If the PACFLT objective function is better with respect to decisions regarding its AOR, or if FFC does not have all of the information necessary for a fully informed decision, the result could be less beneficial to the Navy.

Metrics of standardization that could indicate decisions are fully informed include

- Integrated decisions on readiness
- Standardized Fleet metrics.

Decision Processes

If there are no clearly defined readiness priorities and collaborative processes between FFC and PACFLT, there will continue to be disagreements regarding whether decisions on readiness funding actually improved or degraded overall Navy readiness—and only the CNO has the authority to decide whether one, or neither, is correct. There is not a high degree of trust regarding readiness priorities and funding between the two Fleets, which appears to be based on the differences between the two Fleet commanders' readiness funding priorities and the perception of decreased support from prior consolidation initiatives. The PACFLT staff references the experiences regarding the staffing processes for FDNF in Japan and lower NAVNETWARCOM support as bolstering these concerns.

In FFC's proposed Single Readiness Integrator Framework, their belief is that the information required to fully integrate the PACFLT Fg responsibilities into FFC's "battle rhythm" and processes will come from the current PACFLT TYCOMs and from personnel at Puget Sound Naval Base who are realigned under FFC. FFC has identified what personnel they believe should be initially realigned, but this has not been coordinated with PACFLT, and there are strong relationships between roles and responsibilities of personnel who are dual-hatted in both the PACFLT Maritime Headquarters (MHQ) and the PACFLT Maritime Operations Center (MOC). We recommend that additional review with FFC and PACFLT be conducted prior to any proposed realignment, and that information requirements and responsibilities be clearly defined.

Thus we consider the subjective metric of "Clearly defined processes and readiness priorities" as a prerequisite for any consolidation effort.

PACFLT support to PACOM

Because PACFLT is the NCC supporting PACOM, we address specifically the effect of consolidation on the support to PACOM. This is a specific application of the considerations and metrics covered above. We consider two aspects of this support that could be affected by the alignment of all funding under FFC:

- PACFLT speed of responsiveness to PACOM requests
- PACFLT ability to adjust requirements to meet PACOM requests.

The timeliness aspect parallels the general discussion earlier. As metrics, the aforementioned measures restricted to PACOM requests could be used.

The second aspect of responsiveness to PACOM will be affected by the differences in each Fleet's objective functions—where some PACOM requests that would have been supported by PACFLT are not deemed as high enough of a priority for funding by FFC. With respect to PACFLT's ability to address new requirements, such as the USS *Fitzgerald* and USS *John S. McCain* collisions or increased costs for its deployed forces performing Fe missions, it would now need to go to FFC for additional funding and permission. Consolidation would eliminate PACFLT's flexibility with respect to funding, not only for Fg, but for Fe as well.

Metrics for adjusting to PACOM requests would be appeals to the Joint Staff or CNO, similarly to those described previously regarding quality of decisions.

Summary Responsiveness Matrix

Table 8 provides a summary of the assessments for the categories of responsiveness.

Table 8. Responsiveness metrics assessment summary

Category	Metric	Estimate	Comments
PACFLT Support to PACOM	PACFLT Responsiveness to PACOM Requests PACFLT Ability to Adjust Priorities	? -	Dependent on new Fleet priorities Limited OMN budget flexibility
Speed of Decisions	Time from identification of need for decision to actual decision	?	Uncertain
Appeals to CNO	Number of decision appeals to CNO Number of overturned decisions	? ?	Assume more appeals Uncertain
Visibility/Transparency	Increased Vis/Transparency at FFC Increased Vis/Transparency at PACFLT Increased Vis/Transparency at OPNAV	+ ? +/-	As Single BSO—Total visibility Requires comm/visibility rules Fleet Metrics / Funding Xfrs
Span of Control	COMUSFLTFORCOM Responsibilities FFC Staff Responsibilities	- -	Responsible for Entire Fleet Require new PAC AOR knowledge
Standardization	Integrated Decisions on Readiness Standardized Fleet Metric Reporting	+ +	Single Commander makes decision Expand existing FFC function
Decision Processes	Clearly Defined Processes & Priorities FFC has all information necessary	? ?/+	Would need to be established Requires PAC AOR unique knowledge to be transferred
Legend for Anticipated Effect + = Improved 0 = Neutral - = Degraded ? = Unknown			

Efficiency Metrics

There is agreement between both Fleets that consolidating readiness account funding under a single BSO would be more efficient, but there is disagreement on whether it would be more effective. As one former CNO stated, "You may save some bodies, but it's not worth it." The study team was asked to focus on readiness and responsiveness aspects, but we include assessments of efficiency metrics in two categories: Funds Execution and Staffing.

Funds Execution

Under consolidation, all funding would come through a single BSO and be distributed by a single Lead TYCOM. We would expect uniform obligation and expenditure rates based on this structure, with the ability to realign funds within a single SAG easily across the entire Fleet. In our review of current readiness funding, however, we found that obligation and expenditure rates were already strongly aligned between the two Fleets, and that realignments of funding during the execution-year indicated primarily that there were not excess funds in a SAG in one Fleet and short in the other. The number of intra–SAG BTR requests would be reduced, but these actions are accomplished by FMB, and we were told that they happen quickly and efficiently when needed. We see no change in the number of ATRs required, especially in light of the new $15 million threshold on funding transfers implemented in FY 2017. For these reasons, we believe consolidation would provide minimal benefit in the area of improving funds execution rates.

We propose the following funds execution metrics:

- Uniform across Fleets/TYCOMs
- More efficient balance of funding
- Number of ATRs
- Number of BTRs
- Obligations/Expenditures.

Staffing

Although both Fleets agree that there would be staffing efficiencies, the scope of these efficiencies has not been fully vetted. In its role as the Fleet MCA, FFC has developed estimates of the number of staff that could be reduced, but it appears strongly influenced by the Management Headquarters Activity (MHA) reduction goals, and it has not been coordinated with PACFLT. Although some level of personnel savings could be realized through consolidation, we believe a comprehensive staffing review, with strong emphasis on the PACFLT MHQ–PACFLT MOC relationship and the processes to be managed, would need to be conducted prior to determining the actual personnel reductions. Thus we propose "Staffing efficiencies" as the metric.

Summary Efficiency Matrix

Table 9 provides a summary of assessments in these two categories.

Table 9. Efficiency metrics assessment summary

Category	Metric	Estimate	Comments
Funds Execution	Uniform across Fleet / TYCOMs	+	Integrated TYCOM approach
	More efficient balance of funding	?	History does not show large moves
	Number of ATRs	0	Constant due to $15M threshold
	Number of BTRs	+	Not required for intra-SAG
	Obligations/Expenditures	0	No real change given history
Staffing	Staffing efficiencies	+	Staff efficiencies, but thorough review of PACFLT MHQ/MOC requirements would be needed
Legend for Anticipated Effect + = Improved 0 = Neutral - = Degraded ? = Unknown			

Potential Unintended Consequences

There are also a number of potential unintended consequences and second- or third-order effects that could result from the FFC-proposed Single Readiness Integrator Framework. Because this organizational structure would realign all readiness funding, including Fe, and transfer ADCON for all TYCOMs to FFC, there are a number of areas to be considered. We will review these potential effects in two main areas—geopolitical/political and organizational.

Geopolitical/political

With respect to geopolitical and political implications, most of the unintended affects stem from decreases in the perceived importance of COMPACFLT and in his ability to realign execution-year funding to address PACFLT priorities and interactions with allied Fleets. The majority of these impacts were identified by current and former COMPACFLTs, but they felt strongly that these risks could impact the effectiveness of Navy interactions in the PACOM AOR.

- The reduction of PACFLT's readiness responsibilities and funding could be seen, by both allies and adversaries, as the U.S. scaling back its commitment to the Pacific AOR.
- Realignment of responsibilities could reduce PACFLT stature with allies, and, in their minds, throw into question whether historical COMPACFLT commitments would continue to be supported, because FFC priorities and processes are unknown.
- COMPACFLT would effectively become NAVPAC—an equivalent structure to NAVEUR and NAVCENT—even though it is currently responsible for the employment of the majority of all Navy operational forces.
- Realignment could reduce COMPACFLT stature in DOD and Navy, impacting its ability to influence priorities and represent unique Pacific AOR requirements.

These unintended consequences are potential risks that could adversely affect the ability of the Navy and the U.S.'s ability to influence and shape outcomes in the

Pacific AOR. It is not certain whether these risks would materialize, but they should be considered prior to any action to consolidate funds or realign ADCON.

Organizational

Additionally, there are a number of unintended consequences from an organizational perspective that should be considered:

- Any ADCON realignments will create some level of disruption with respect to the Fleet MHQ and the TYCOM staffs, particularly if Follow TYCOMs are redesignated as detachments and aligned under the Lead TYCOMs. The effects would be greatest at the beginning of the realignment period, particularly if realignment were accompanied by staffing reductions.

- Lead TYCOMs will be required to assume increased responsibilities with respect to tracking and executing readiness funding portfolios. The Lead TYCOMs for the Air and Surface communities, now under PACFLT, would need to be integrated into the FFC "battle rhythm" and processes, requiring some level of changes to existing processes.

- Having all TYCOMs reporting directly to FFC could reduce PACFLT AOR advocacy. There is a natural tension in the current organizational structure that allows for strong advocates in both the FFC and PACFLT organizations. If all ADCON were realigned to FFC, there is a risk that unique PACFLT issues may receive less support, given that the reporting chain would now be to FFC. Without defined Fleet-wide processes and priorities, this possibility causes concern at PACFLT.

- With the reduction of 89 percent of its total OMN funding, COMPACFLT's ability to realign funding and determine where to take risk with respect to readiness is removed. Additionally, PACFLT would not directly control its Force Employment (Fe) funding and may have to request FFC permission to realign funding between operational forces. This relationship and the process for redistributing funding has not yet been defined.

Based on these potential consequences, we would expect that execution-year adjustments that are made to address changing circumstances in PACFLT—under the current structure and with the current information and priorities—might not occur under consolidation because of differences either in the information available or in priorities. Without agreed-to readiness priorities and processes, it is conceivable that PACFLT would interpret some degree of decisions as detrimental to overall Navy readiness.

Recommendations

Based upon our evaluation, we believe there are actions that could be taken within the current organizational construct to better align Fleet readiness priorities and increase visibility/transparency, achieving many of the perceived benefits of consolidation. Given the inability to baseline or model future Fleet commander readiness objective functions, we do not believe that a pilot initiative would provide the insight necessary to either validate or disprove the effects associated with consolidation. Therefore, we recommend that the Navy consider actions in several areas to better align efforts across TYCOMs and gain additional insight into whether there are readiness cost-effectiveness differences between the two Fleets that could be leveraged to realize funding efficiencies, freeing funds to be used in pursuit of greater readiness:

- Do not consolidate ADCON for the TYCOMs at this time, but increase the responsibilities, authorities, and accountability (RAA) for Lead TYCOMs
- Standardize data and metrics for both Fleets, with more detailed reporting on readiness funding metrics
- Increase visibility with respect to readiness funding across both Fleets
- Provide additional Fleet readiness performance metrics in the FFC Annual Report
- Conduct semiannual presentations by Lead TYCOM commanders to the Fleet Commanders Readiness Council (FCRC)
- Do not perform a consolidation pilot initiative.

Our recommendations are summarized and discussed in more detail below.

Do not consolidate ADCON for the TYCOMs at this time, but increase RAA for Lead TYCOMs

Our review indicates that a large number of the proposed readiness and responsiveness benefits proposed could be achieved within the existing organizational structure, through increasing the RAA of the Lead TYCOMs, improving the level of communication and visibility between the two Fleets, and addressing potential differences through the FCRC. Both Fleets see FMB as an honest broker, but seem incentivized to solve issues within their own BSO's funding authorities. A more holistic review of readiness funding at the beginning of the FY, with readiness priorities clearly outlined, could ensure better alignment in Fleet priorities. This approach (similar in nature to the "Monthly Mitigation of Fiscal Year 2017 Navy Afloat Readiness Shortfalls" document [31]), with Lead TYCOMs identifying inconsistencies and advocating for consistent implementation across the entire Fleet, could result in increased overall readiness.

While some level of efficiencies could be achieved through consolidation, we do not believe these savings in personnel and, potentially, funding would necessarily offset the disruption and unintended consequences.

Standardize data and metrics for both Fleets, with more detailed reporting on readiness funding metrics

Aggregate Fleet readiness metrics provide a strategic view of Fleet performance, and thus a window into readiness. However, as aggregates, they may obscure important variation between ship classes or aircraft T/M/S. For example, it is possible to over-execute depot maintenance for one ship class (for example, aircraft carriers) and to simultaneously under-execute depot maintenance for another ship class (for example, destroyers). The result might be execution that is on track in aggregate, but that leaves an imbalanced Fleet that is not able to function as a complete strike group. Furthermore, imbalanced spending might be inefficient, over-investing in one category (with limited marginal improvements) and under-investing in another category.

A careful review of the metrics that are collected and reported is needed, balancing the cost of collecting and interpreting the metrics with the value of the information provided. We believe there would be merit in the TYCOMs reviewing and reporting

information in the FFC Annual Report on a recurring basis to the FCRC, with identification of any large differences between Fleets and an assessment of the causes of these differences. If some of those causes indicate that one Fleet has identified a more efficient approach, greater visibility of those differences can improve efficiency.

Increase visibility with respect to readiness funding across both Fleets

The proposed Single Readiness Integrator Framework would provide increased visibility at FFC for all aspects of operational readiness and readiness funding. Processes to ensure visibility at OPNAV and PACFLT, however, would still need to be defined. By developing common data requirements, reporting structures, and information interfaces under the current structure, the Navy can increase visibility and communication between the Fleets, and with the OPNAV staff. Furthermore, by requiring the Lead TYCOM to report for the entirety of its type, issues with data uniformity and integration can be mitigated.

Provide additional Fleet readiness performance metrics in Annual Report

While aggregated Fleet and carrier air wing (CVW) statistics provide a level of understanding for readiness and performance, more detailed comparisons, by T/M/S and OFRP phase, could provide necessary insights into how each Fleet is supporting and utilizing its resources. Metrics that we recommend be included in the FFC Annual Report, for both Fleets, are the following:

- Average flight hours per crew, by T/M/S, squadron, OFRP phase, and Fleet, along with the average T-rating by squadron in each OFRP phase
- Mission Capable and Fully Mission Capable Rates, by T/M/S, OFRP phase, and Fleet
- Number of aircraft Out of Reporting (OOR), by T/M/S and Fleet—both in number and in percent of each Fleet's total inventory
- Average steaming hours per ship, by ship class, OFRP phase, and Fleet, versus hours programmed

- Average number of Casualty Reports (CASREPs) per ship, by CASREP category, ship class, OFRP phase, and Fleet
- Average number of CSMP discrepancies per ship, by CASREP category, ship class, OFRP phase, and Fleet.

Conduct semiannual presentations by Lead TYCOM to the FCRC

Many former Fleet commanders noted the importance of the Lead/Follow TYCOM relationship, and emphasized the original intent for the Lead TYCOMs to manage the resources across both FFC and PACFLT. The Lead TYCOMs' ability to manage both Fleets' resources, however, has been limited based on funding and resourcing decisions coming from two different BSOs.

The ability to standardize resourcing decisions and readiness activities across both Fleets could be increased, with or without consolidation, if the Fleet commanders more closely coordinated resourcing priorities based on Lead TYCOM recommendations. We recommend that the Naval Air, Surface, and Submarine Forces commanders brief the FCRC semiannually on programmed execution of their readiness funding, any notable differences in the execution plans of each Fleet, and recommendations, as appropriate, on where funds or requirements should be adjusted. We recommend the first briefing occur early in the FY, to set baseline funding and performance levels, with the second briefing around May, for a mid-FY review and to allow for any subsequent adjustments or alignments.

Do not perform a consolidation pilot initiative

Based on our review, we believe a pilot to test the benefits of consolidation would not be beneficial for two main reasons. The first is that the current Fleet objective functions are not defined, and it would not be possible to establish the counter-factual position on what would have happened under the current structure for comparison purposes. The second is that there are a large number of external factors (e.g., SMEC and maintenance deep-dive actions, increased staffing at the Navy depots, funding for aviation DLRs, etc.) that directly affect readiness, without a clear way to determine the ultimate cause for any readiness changes. Based on the level of effort that would be required to implement and assess a test case, we do not believe the potential benefits are worth the effort and expense.

Summary

Tasking and scope

This study reviewed, in terms of readiness and responsiveness, the potential benefits, challenges, and risks associated with FFC's proposed organizational structure—consolidating the readiness account funding currently in FFC (BSO 60) and PACFLT (BSO 70) under BSO 60, and realigning ADCON of all TYCOMs under FFC. The study supports CNO's Blue LOE, Task 5: "Examine the organization of United States Fleet Forces Command, Commander, Pacific Fleet and their subordinate commands to better support clearly defining operational and warfighting demands and then to generate ready forces to meet those demands."

The five readiness accounts identified for potential consolidation are OMN sub-activity groups (SAGs): Mission and Flight Operations (1A1A); Fleet Air Training (1A2A); Aircraft Depot Maintenance (1A5A); Mission and Other Ship Operations (1B1B); and Ship Maintenance (1B4B).

- Discussions with the representatives from both Fleets indicated that the current funding and execution structure for SAG 1A5A should remain under COMNAVAIR (BSO 19), so our assessments focused on the remaining four SAGs.

Our review of the readiness funding in the two Fleets found that approximately 60 percent of all Fleet readiness funding in the FY 2018 President's Budget, both by FY and across the FYDP, is programmed in PACFLT (BSO 70). This funding represents approximately 90 percent of all PACFLT OMN funding across the FYDP, and includes not only Fg funding, but also all PACFLT Force Execution (Fe) funding. FFC (BSO 60) manages approximately 40 percent of the Fleet readiness funding, which represents approximately 75 percent of FFC's total OMN funding across the FYDP.

Comparison of Fleet readiness

Fleet metrics for aircraft and ship material condition were compared using data from the SCIR and DECKPLATE databases, respectively, to determine if one Fleet had superior rates. This review of aircraft FMC, MC, NMCM, and NMCS rates and ship

CASREPs found similar performance in both Fleets, by aircraft T/M/S and ship class. These aggregate metrics do not, therefore, indicate differences in the level of material condition attained by each Fleet, so we would expect no changes as a result of funding consolidation.

FFC-proposed Single Readiness Integrator Framework

We then outline the organizational structure proposed by FFC for implementing consolidated oversight of all readiness funding—a "Single Readiness Integrator Framework." The most significant aspects of this proposed framework are that it would realign ADCON of all Lead TYCOMs under FFC; redesignate Follow TYCOMs as detachments under ADCON of the Lead TYCOMs; and realign Puget Sound NSY from PACFLT to FFC.

Current Fleet readiness organization and processes

In identifying and documenting the current organization and processes for readiness requirements development for FFC and PACFLT, we found that planning, programming, and budgeting activities were conducted in a standardized, collaborative fashion. These processes are led by FFC, in accordance with its MF&T [14], and use standard OPNAV N83 costing models for each readiness account. For these reasons, we conclude that consolidation of readiness funding under a single BSO, and the corresponding alignment of ADCON for Force Generation (Fg) activities, would not affect the final POM business rules, processes, or readiness requirements.

Differences in readiness priorities and risk decisions between the two Fleets seem to arise when funding decisions are required during the execution-year. At this point, each individual Fleet commander controls all of their BSO's readiness funding and, unless prohibited by law, the Navy Secretariat or the OPNAV staff can execute these funds in the manner they feel maximizes readiness within the resources available.

We document the U.S. Air Force (USAF) and U.S. Army (USA) processes for planning, programming, budgeting, and executing Fg requirements. The USAF Centralized Asset Management (CAM) process uses a corporate structure involving participants from all major commands and is chaired by the HQ AF/A4, AFMC Vice Commander, and SAF/FMB. AFMC then acts as the executive agent for these readiness funds, which are all contained in a single program element (PE) code. The USA processes for requirements development and execution of Fg funding are very similar to the

current Navy processes, with FORSCOM's role similar to FFC's with respect to ensuring consistency of the Fg requirements and funding across FORSCOM, USAREUR, and USARPAC, and Army Materiel Command (AMC) programming separately (similar to NAVAIR) for the Army depot funding.

Fleet Commander comments

We held discussions with eight current and former Fleet commanders, and found strongly held beliefs both for and against consolidation. Most agree that a Single Readiness Integrator Framework would be more efficient, but many, particularly those who had leadership roles in PACFLT, feel it would be less effective—and that the reorganization would cause a level of disruption that would detract from readiness efforts. Main points from the review and discussions:

- Strong Lead TYCOMs are the key to improving readiness—regardless of any actions taken or not taken
- FFC believes it can seamlessly integrate all PACFLT Fg responsibilities using current processes and "battle rhythm"
  - Concern from individuals who had command positions in both Fleets that this would be too broad a span of control for FFC
- The new framework would result in a loss of stature for COMPACFLT, effectively becoming COMNAVPAC
  - Could negatively impact ally and adversary views on U.S. commitment to the Pacific
- With respect to MCA consolidation, the limited example of the FDNF Japan manning conference points to the need for increased communication and transparency.

Analytic approach

To evaluate the potential effects of consolidation on Fleet readiness, we use optimization models as a framework to synthesize historical readiness factors and to understand the feasibility of consolidating readiness funding. We discuss the concepts of objective functions, which are intended to maximize an organization's priorities, and of feasibility constraints, which limit the outcomes of the objective function (e.g., resources available, maximum output possible, etc.). When constraints

are binding, relaxing these constraints results in a larger tradespace, and the optimal allocation can lead to a higher objective function (i.e., readiness) value

Based on discussions and reviews of Fleet readiness reporting, we model each Fleet commander as seeking to maximize readiness along four dimensions: achieving OFRP; maximizing combat readiness (CR); meeting or exceeding A_0 goals; and ensuring "Wholeness" (W), which we define as the near- and long-term viability and health of Fleet weapon systems. Thus, in its most basic form, we state the Fleet commander's objective function as

$$OR = f(OFRP, CR, W, A_0)$$

In our review we found, however, that the current Fleet objective functions are not documented, unique to each Fleet commander, situationally dependent, and based on different Fleet readiness priorities. Some may assert that this is due to a broader set of responsibilities for FFC, but execution-year decisions on where to take risk appeared to be more TYCOM- and depot-related than unique to the AOR. For these reasons, and the large number of external factors affecting readiness, we cannot determine a readiness baseline for the current organizational structure or accurately predict how the FFC proposed framework would perform.

In reviewing constraints, we found that the majority of benefits that might be realized by relaxing constraints to improve the tradespace could be achieved through better coordination and communication in the current organizational structure.

Because a quantitative assessment of current Fleet readiness objective functions is not possible, we performed a qualitative assessment of anticipated effects with respect to metrics for readiness, responsiveness, and efficiency. Our review showed that consolidation may or may not improve Navy readiness, and that it would be extremely difficult, given the large number of exogenous factors and ongoing improvement efforts, to determine what the underlying causes were for any changes.

In addition, consolidation may or may not improve responsiveness, but our review indicates that there is a need for improved execution-year communication and processes to support the level of coordination that was eventually agreed to in the "Monthly Mitigation of Fiscal Year 2017 Navy Afloat Readiness Shortfalls" document [31] in April 2017. This effort resulted in a synchronized approach to addressing the risk of not having an approved congressional appropriations act aligning efforts and risks.

Recommendations

Based upon our evaluation, we believe there are actions that could be taken within the current organizational construct to better align Fleet readiness priorities and increase visibility/transparency, achieving many of the perceived benefits of consolidation. Given the inability to baseline or model future Fleet commander readiness objective functions, we do not believe that a pilot initiative would provide the insight necessary to either validate or disprove the effects associated with consolidation. We, therefore, recommend that the Navy consider actions in several areas to better align efforts across TYCOMs and garner additional insight, and that a pilot initiative not be pursued.

We also recommend that the Navy not consolidate ADCON of the TYCOMs at this time, but increase the responsibilities, authorities, and accountability (RAA) of the Lead TYCOMs to support alignment of readiness priorities across both Fleets. Fleet commanders would still ultimately decide execution-year priorities, but they would be done in a more consistently informed manner, with visibility across OPNAV and both Fleets regarding priorities.

In addition, we recommend that the Navy consider taking actions in several areas to increase the transparency and trust that are essential elements for coordinated Fleet actions regarding execution-year Fg decisions and actions. Specific actions are identified in the Recommendations section of this report, but we note here efforts on providing more standardized and detailed reporting on readiness funding metrics; increasing visibility with respect to readiness funding across both Fleets and OPNAV; additional Fleet readiness performance metrics being included in the FFC Annual Report—covering both Fleets; and semiannual presentations by Lead TYCOM commanders to the FCRC regarding the health of their enterprises, significant differences between Fleets, and recommendations for priorities/funds alignment.

The Navy could also consider conducting a wargame or table top exercise (TTX) to evaluate current friction points between the two Fleets with respect to Fg and funding priorities, and what potential actions could best address these friction points—improving communication, increasing transparency, and/or facilitating a balance of actions across both Fleets.

Conclusion

In comparing the current Navy readiness organizational structure with the proposed Single Readiness Integrator Framework, we found a number of processes and products that would remain unchanged, regardless of whether or not consolidation was pursued. These include the Navy allocations within the Unified Command Plan

(UCP), the determination of resources to support Global Force Management (GFM), the development of the readiness funding POM requirements, and the number of above threshold reprogramming (ATR) actions. Differences would be with respect to primarily the determination of execution-year readiness priorities and funding reallocations.

The implementation of a Single Readiness Integrator Framework may result in a reduction in personnel required at the Fleet headquarters, but the potential benefits in terms of readiness are difficult to quantify, given the lack of a common Navy definition of readiness priorities and the fact that each Fleet commander's readiness objectives and priorities are unique, undocumented, and situation dependent. Given these conditions, and the large number of external actions that affect Fleet readiness (e.g., Continuing Resolutions, unanticipated ship repairs, shipyard workforce increases, etc.), we do not believe that a pilot initiative would provide the insights necessary to evaluate the readiness effects of a consolidated framework.

A majority of former Fleet commanders noted that Lead/Follow TYCOM alignment and coordination were the key to any successful improvement in readiness. At present, the potential benefits of the Lead/Follow TYCOM structure appear to be offset by the TYCOMs' strong alignment to their respective Fleet commanders. While this issue would be mitigated by the proposed Single Readiness Integrator Framework, we believe that the majority of benefits could be realized under the current organizational construct, with increased responsibility, authority, and accountability for the Lead TYCOM commanders. Fleet commanders would still ultimately make execution-year readiness resource decisions, but with full visibility across both Fleets and the OPNAV staff.

In light of the potential geopolitical and political ramifications, the potential disruption that would result from consolidation, and the range of other actions currently being implemented to improve readiness, we also recommend that the Navy consider retaining the current ADCON structure, while increasing funding and readiness visibility between the Fleets and the OPNAV staff. By standardizing readiness metrics, criteria, and reporting across both Fleets, and having Lead TYCOMs report for the totality of their type, we believe a significant portion of the proposed benefits of the Single Readiness Integrator Framework could be realized. This would also support the identification and implementation of information interfaces and requirements between the Fleets, and support a more informed discussion of consolidation, should it be considered in the future.

Appendix A: Senator Inouye Amendments

Senator Daniel Inouye of Hawaii introduced language that was included in appropriations bills from FY 2004 through FY 2015, which limited the Navy's ability to alter command and control relationships with respect to PACFLT. The appropriation language changed slightly over time, and the individual appropriation acts and language for each are listed below.

H.R.3289 - Emergency Supplemental Appropriations Act for Defense and for the Reconstruction of Iraq and Afghanistan, 2004

> **Sec. 1113.** None of the funds available to the Department of Defense may be obligated to implement any action which alters the command responsibility or permanent assignment of forces until 270 days after such plan has been provided to the congressional defense committees.

H.R. 108-622 – Department of Defense Appropriations Act for FY 2005

> **SEC. 8101.** None of the funds available to the Department of Defense may be obligated to implement any action which alters the command responsibility or permanent assignment of forces until 270 days after such plan has been provided to the congressional defense committees.

H.R. 1268 – Emergency Supplemental Appropriations Act for Defense, the Global War on Terror, and Tsunami Relief, 2005

> **Sec. 1025**(d) Pacific Fleet Authorities. None of the funds available to the Department of the Navy may be obligated to modify command and control relationships to give Fleet Forces Command administrative and operational control of U.S. Navy forces assigned to the Pacific fleet: Provided, That the command and control relationships which existed on October 1, 2004 shall remain in force unless changes are specifically authorized in a subsequent act.

H.R. 2863 – Department of Defense Appropriations Act for FY 2006

> **SEC. 8106.** None of the funds available to the Department of Defense may be obligated to modify command and control relationships to give fleet Forces Command administrative and operational control of U.S. Navy

> forces assigned to the Pacific fleet: Provided, That the command and control relationships which existed on October 1, 2004, shall remain in force unless changes are specifically authorized in a subsequent Act.

The FY 2006 Defense Appropriations Act language was repeated verbatim in other numbered sections of the Defense Appropriation Acts from FY 2007 to FY 2011. The language was changed in the Defense Appropriations Act for FY 2012, when restrictions regarding U.S. Transportation Command units were added.

H.R. 2055 – Department of Defense Appropriations Act for FY 2012

> **SEC. 8072.** (a) None of the funds available to the Department of Defense may be obligated to modify command and control relationships to give Fleet Forces Command operational and administrative control of U.S. Navy forces assigned to the Pacific fleet.
>
> (b) None of the funds available to the Department of Defense may be obligated to modify command and control relationships to give United States Transportation Command operational and administrative control of C–130 and KC–135 forces assigned to the Pacific and European Air Force Commands.
>
> (c) The command and control relationships in subsections (a) and (b) which existed on March 13, 2011, shall remain in force unless changes are specifically authorized in a subsequent Act.

H.R. 933 – Consolidated and Further Continuing Appropriations Act, FY 2013

> **SEC. 8071.** (a) None of the funds available to the Department of Defense may be obligated to modify command and control relationships to give Fleet Forces Command operational and administrative control of U.S. Navy forces assigned to the Pacific fleet.
>
> (b) None of the funds available to the Department of Defense may be obligated to modify command and control relationships to give United States Transportation Command operational and administrative control of C–130 and KC–135 forces assigned to the Pacific and European Air Force Commands.
>
> (c) The command and control relationships in subsections (a) and (b) which existed on March 13, 2011, shall remain in force unless changes are specifically authorized in a subsequent Act.
>
> (d) This subsection does not apply to administrative control of Navy Air and Missile Defense Command.

H.R. 3547 – Consolidated Appropriations Act, FY 2014

> **SEC. 8071.** None of the funds available to the Department of Defense may be obligated to modify command and control relationships to give Fleet Forces Command operational and administrative control of U.S. Navy forces assigned to the Pacific fleet: Provided, That the command and control relationships which existed on October 1, 2004, shall remain in force unless changes are specifically authorized in a subsequent Act:

> Provided further, That this section does not apply to administrative control of Navy Air and Missile Defense Command.

H.R. 113-473 – Defense Appropriations Act for FY 2015, with Additional Views (to accompany H.R. 4870)

> Section 8070 prohibits funding from being obligated to modify command and control relationships to give Fleet Forces Command operational and administrative control of Navy forces assigned to the Pacific Fleet or to give United States Transportation Command operational and administrative control of certain aircraft.

Appendix B: Fleet Commander Responsibilities and Authorities

Table 10 lists responsibilities of COMUSFLTFORCOM and COMPACFLT, as identified in U.S. Navy policy, as noted in the citations for each entry. This matrix highlights both common and unique Fleet responsibilities.

Table 10. Fleet commander responsibilities and authorities

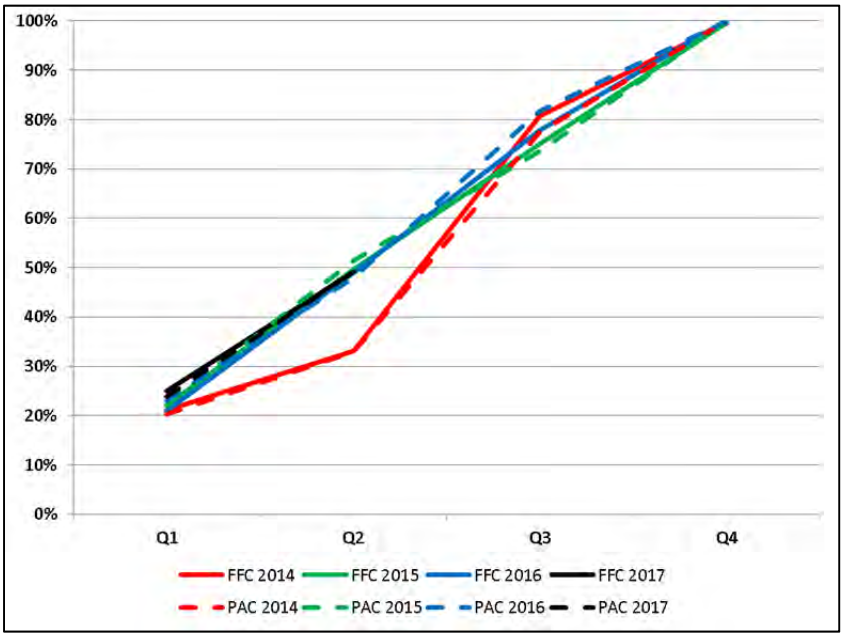
Responsibilities	COMUSFLTFORCOM	COMPACFLT
Man, Train, and Equip	CNO delegates to COMUSFLTFORCOM authority under references (a) through (c) [10 U.S.C. §5032, 10 U.S.C. §5033, and U.S. Navy Regulations, 1990] to organize, supply, train, equip, administer, and maintain assigned Navy forces and shore activities to generate required levels of current and future fleet readiness.	Chief of Naval Operations (CNO) delegates to COMPACFLT authority under reference (a) [10 U.S.C.] to organize, man, train, equip, and maintain assigned Navy forces and shore activities to generate required levels of current and future fleet readiness. (OPNAVINST 5450.337B, 3.a.)
Budget Submitting Office	COMUSFLTFORCOM is the budget submitting office (BSO) with financial management authority and responsibility under reference (d) [SECNAVINST 7000.27A] for assigned fleet operating forces, shore activities, military and civilian personnel, fleet training, infrastructure, and budget. (OPNAVINST 5440.77B, 3.b.)	COMPACFLT is the budget submitting office (BSO) with financial management authority and responsibility under reference (f) for assigned forces, shore activities, military and civilian personnel, budget, fleet training range sustainment, and environmental planning. (OPNAVINST 5450.337B, 3.b.)
Global Force Management	CNO delegates to COMUSFLTFORCOM authority to generate and communicate Navy global force management solutions concerning general purpose forces and ad hoc forces retained by the Secretary of the Navy in reference (e) [Global Force Management Implementation Guidance FY2012-2013]. (OPNAVINST 5440.77B, 3.c.)	Support COMUSFLTFORCOM in the execution of Navy global sourcing solutions as the Navy global force manager in response to combatant commander requests for general purpose forces, ad hoc forces, and individual augmentees. (OPNAVINST 5450.337B, Encl 1, 2.b.(6).)
Navy Readiness Organize, supply, train, equip, administer and maintain Navy forces	In collaboration with COMPACFLT, organize, supply, train, equip, administer and maintain Navy forces, develop and submit budgets as a BSO per reference (d), and execute readiness and personnel accounts to generate required levels of current and future fleet readiness. (OPNAVINST 5440.77B, Encl 1, 1.b.)	Organize, man, train, maintain, and equip Navy forces in support of the CNO in collaboration with COMUSFLTFORCOM. (OPNAVINST 5450.337B, Encl 1, 2.b.)
Navy Readiness Fleet training	In consultation with COMPACFLT, be the unified voice for fleet training requirements and policies to generate combat ready Navy forces per the Fleet Response Plan (FRP) (OPNAVINST 3000.15). (OPNAVINST 5440.77B, Encl 1, 1.c.)	
Navy Readiness Fleet Integration Executive Panel	In coordination with COMPACFLT, lead the Fleet Integration Executive Panel to integrate readiness planning, reporting, risk management, and execution; clarify accountability for force-wide efficient use of resources; promote enhanced coordination and collaboration among stakeholders in mission effectiveness; and streamline decision- making. (OPNAVINST 5440.77B, Encl 1, 1.d.)	

Responsibilities	COMUSFLTFORCOM	COMPACFLT
Navy Readiness Manpower and Personnel	Develop fleet manpower, personnel, and individual training and education policies, requirements, processes, programs, and alignments affecting active, reserve, and civilian personnel in support of operational readiness. (OPNAVINST 5440.77B, Encl 1, 1.e.)	
Navy Readiness Maintenance and Logistics	Develop fleet maintenance, logistics, and infrastructure policies, requirements, processes, programs, and alignments in support of operational readiness. (OPNAVINST 5440.77B, Encl 1, 1.f.)	
Navy Readiness Readiness Training	Develop fleet training policies, requirements, processes, programs, and alignments in support of operational readiness. (OPNAVINST 5440.77B, Encl 1, 1.g.)	
Navy Readiness Readiness Resource Metrics	Integrate readiness resource metrics for personnel, equipment, supply, training, and ordnance to provide a comprehensive means of assessing capabilities-based operations. (OPNAVINST 5440.77B, Encl 1, 1.i.)	
Navy Readiness FRP (now OFRP)	Execute the FRP per OPNAVINST 3000.15. (OPNAVINST 5440.77B, Encl 1, 1.k.)	
Overseas Representation		COMPACFLT is the Navy's chief representative, critical to the success of U.S. Government efforts in the Indo-Asia-Pacific, encompassing 42 countries, by fulfilling a variety of international roles for the Department of Defense (DoD). This includes conducting one-on-one interfaces with foreign officials and Navy chiefs to convey U.S. positions and requirements, as well as serving as a representative in international symposiums and naval events to improve collective security efforts in the theater. (OPNAVINST 5450.337B, 7.)
Support USPACOM Theater Security Cooperation		Support USPACOM theater security cooperation strategy with robust forward presence and planning for, and participating in, exercises and real world contingencies in order to build trust and confidence among Indo-Asia-Pacific navies and enhance cooperation. Efforts include humanitarian assistance operations, peacekeeping operations, counter-narcotics operations, security assistance support, and counter-terrorism operations. (OPNAVINST 5450.337B, Encl 1, 2.a.(2).)
Outside CONUS support to the Fleet		Provide oversight of operations, readiness, training, and current and future requirements development for outside of the continental United States support to the fleet. (OPNAVINST 5450.337B, Encl 1, 2.a.(11).)
Fleet Transformation		Initiate and enable fleet transformation through operational concept development and experimentation and promote science and technology integration to address fleet capability gaps. (OPNAVINST 5450.337B, Encl 1, 2.b.(11).)
Theater-Joint Force Maritime Component Commander (T-JFMCC)		COMPACFLT serves as T-JFMCC per JP 3-32, Command and Control of Joint Maritime Operations, 7 August 2013, and USPACOMINST 0530.1, and executes maritime operations center (MOC) supported missions per Navy Warfare Publication 3-32 and Navy Tactics, Techniques, and Procedure 3-32.1. (OPNAVINST 5450.337B, Encl 2, 1.)
identifying, consolidating, and prioritizing fleet maintenance and modernization requirements Lead for collection and consolidation of resource requirements Single fleet voice and point of submission of resource requirements to CNO	Commander, United States Fleet Forces Command (COMUSFLTFORCOM) has primary responsibility for identifying, consolidating, and prioritizing fleet maintenance and modernization requirements in conjunction with Commander, Pacific Fleet (COMPACFLT) and the warfare enterprises with support from the lead technical authority, COMNAVSEASYSCOM, which establishes the technical requirements. COMUSFLTFORCOM will serve as the lead for collection and consolidation of resource requirements, and act as the single fleet voice and point of submission of resource requirements to CNO (N4). (OPNAVINST 4700.7L, 5.b.(2).)	
Documents		
OPNAVINST 5440.77B, Missions, Functions, and Tasks of United States Fleet Forces Command, April 25, 2012		
OPNAVINST 5450.337B, Missions, Functions, and Tasks of Commander, United States Pacific Fleet, January 21, 2016		
OPNAVINST 4700.7L, Maintenance Policy for United States Navy Ships, May 25, 2010		

Appendix C: Fleet Obligation Rates

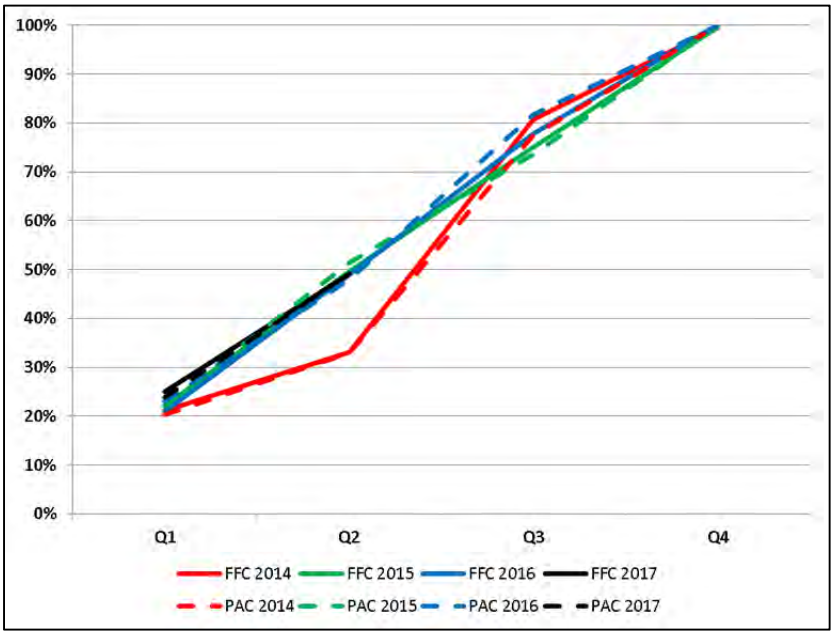
This appendix includes the obligation rate comparisons for all four of the readiness funding SAGs, by FY and Fleet. In each graphic, we plot the rates for each FY from FY 2014 to FY 2017, by quarter, with each FY depicted by a different color. FFC rates are shown as solid lines, and PACFLT rates are shown as dashed lines (in the same color for each FY).

Figure 50. 1A1A, Flying Hours Program (FHP), obligations comparison



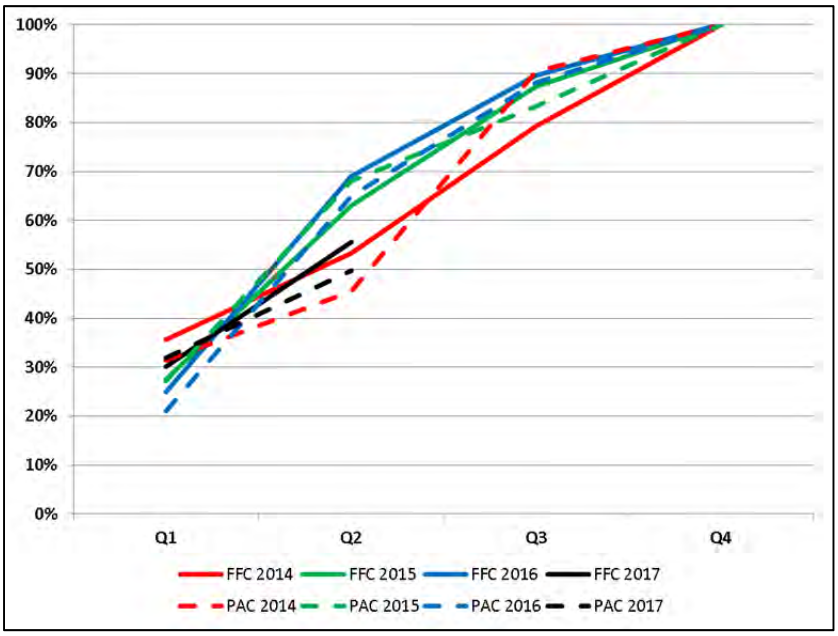
Source: OPNAV N82/FMB.

Figure 51. 1A2A, Aviation Training, obligations comparison



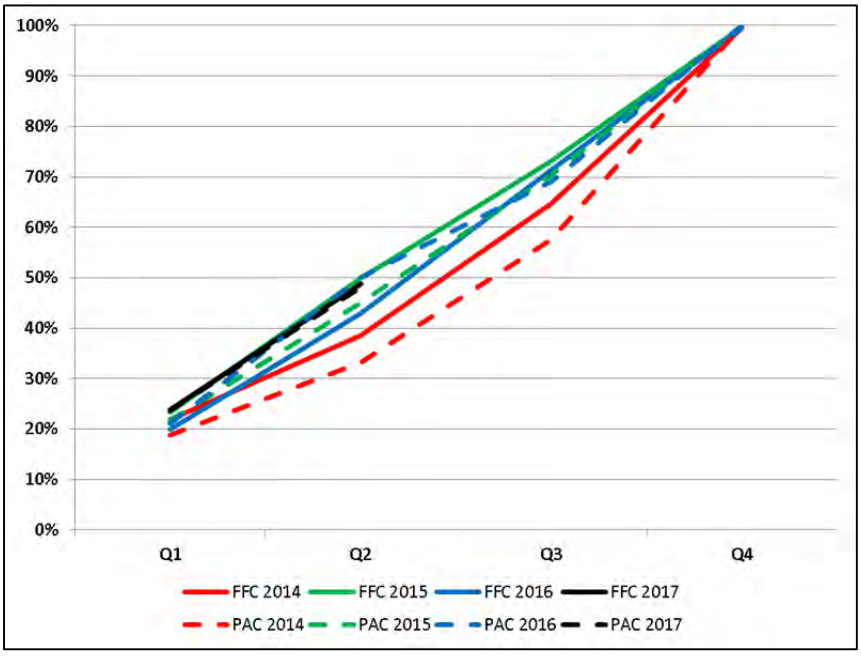
Source: OPNAV N82/FMB.

Figure 52. 1B1B, Ship Operations, obligations comparison



Source: OPNAV N82/FMB.

Figure 53. 1B4B, Ship Maintenance, obligations comparison

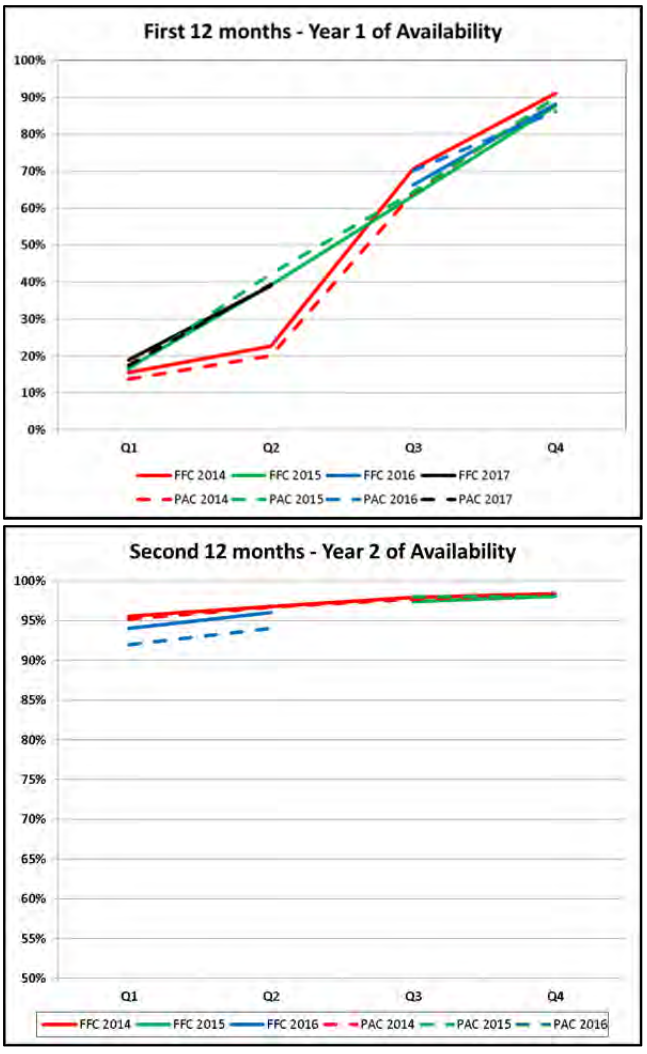


Source: OPNAV N82/FMB

Appendix D: Fleet Expenditure Rates

Figures 54 to 57 show readiness fund expenditures, by Fleet and FY, for each of the four readiness SAGs.

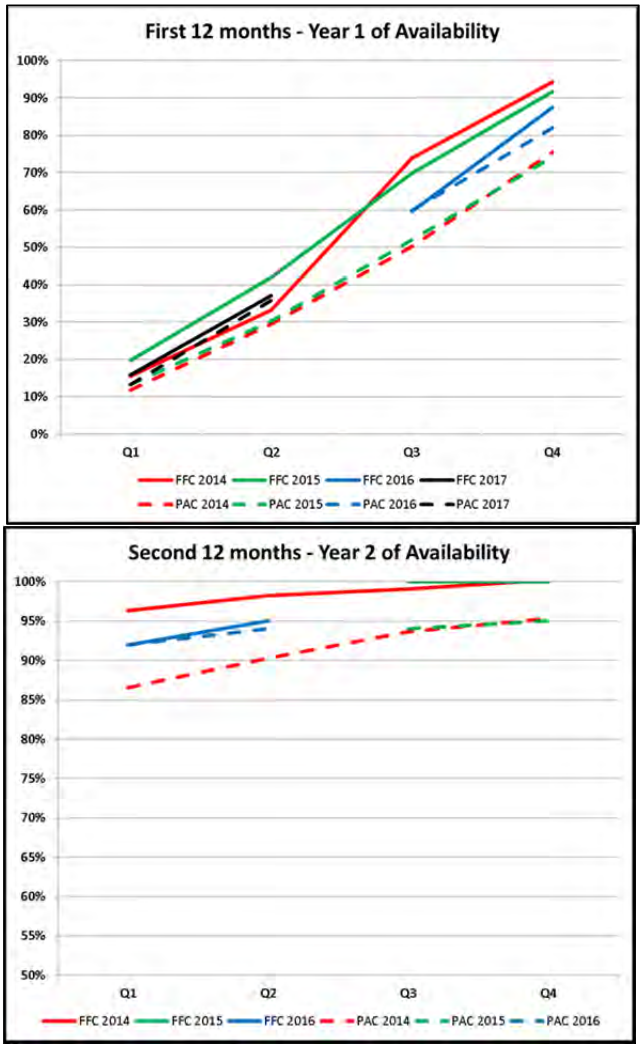
Figure 54. 1A1A, FHP, first- and second-year expenditures comparison



Source: OPNAV N82/FMB.

SAG 1A2A expenditures are shown in Figure 55. First-year expenditures for PACFLT were much lower in FY 2014 and FY 2015, but closely align with FFC for FY 2016 funding. In the second year, we see this same relationship, but PACFLT FY 2016 funds are now executing in a parallel manner with FFC.

Figure 55. 1A2A, Aviation Training, first- and second-year expenditures comparison

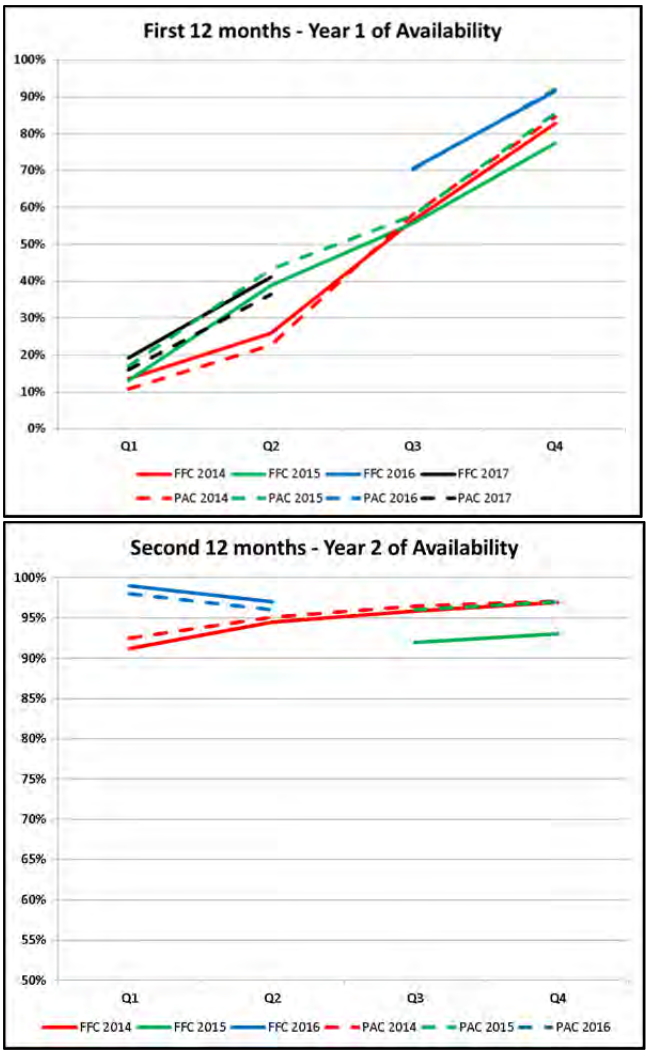


Source: OPNAV N82/FMB.

Funding expenditures for SAG 1B1B, Figure 56, show very similar trends in the first year of execution, though FFC lagged PACFLT slightly for FY 2015 funding. FY 2016

fund expenditures in the first year were also higher than in previous years for both Fleets. In the second year of availability, FFC expenditures for FY 2015 funds lagged PACFLT, but Fleet rates are otherwise consistent. The other anomaly for this SAG is the decrease in expenditure rates, for both Fleets, from Q1 to Q2 of FY 2016 funds in the second year of execution. This was due to increases of approximately $50 million in each Fleet's unexpended funds estimates during this period.

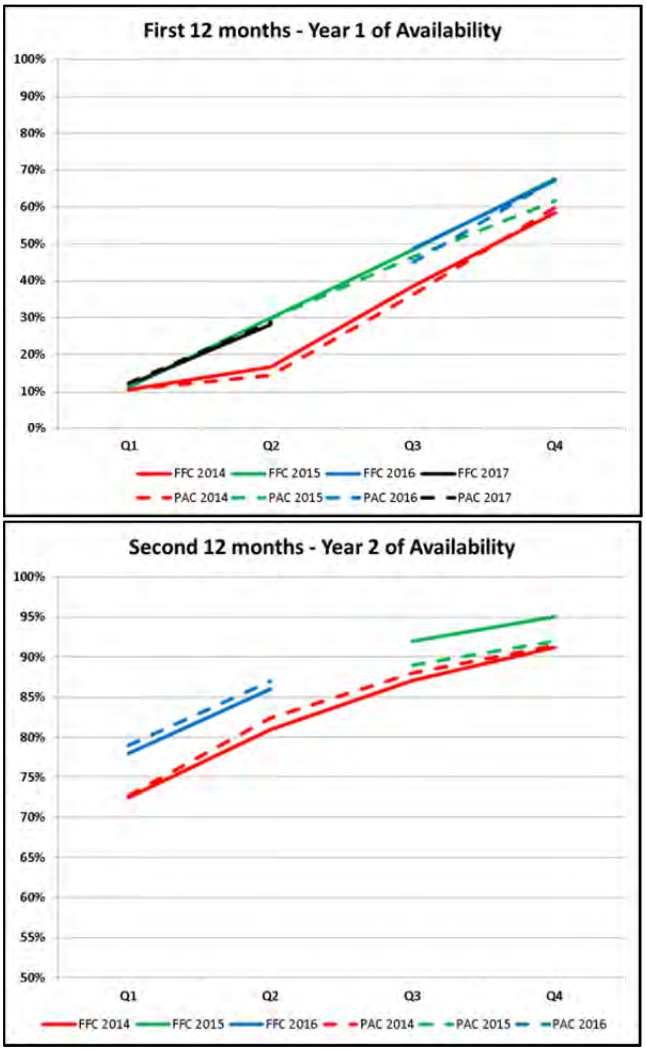
Figure 56. 1B1B, Ship Operations, first- and second-year expenditures comparison



Source: OPNAV N82/FMB.

Ship Maintenance expenditures (SAG 1B4B), shown in Figure 57, show consistent trends, by FY, between Fleets, with the exception of second-year expenditures for FY 2015 funds. In this instance, FFC's expenditures were slightly higher than PACFLT's.

Figure 57. 1B4B, Ship Maintenance, first- and second-year expenditures comparison



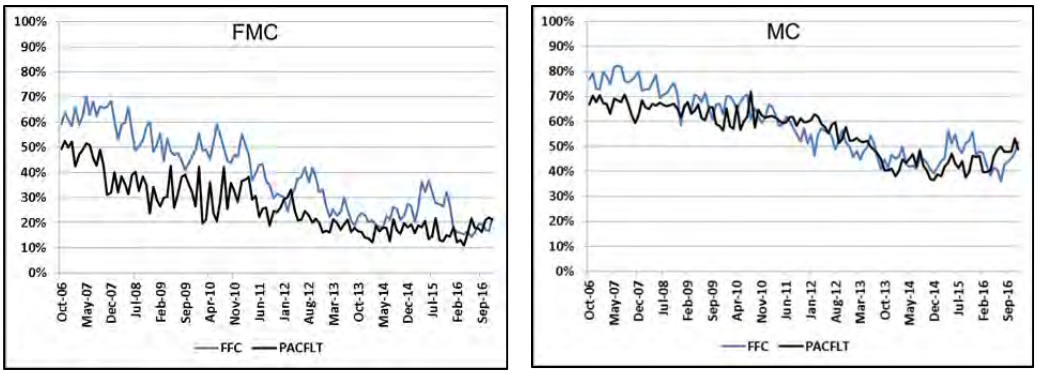
Source: OPNAV N82/FMB.

We also see that expenditure rates for this SAG, in both years, are lower than seen in the other readiness accounts, resulting in an average of 10 percent of 1B4B funds going into the third year of funding availability. We understand that this is due to the extended length of ship availabilities, which are awarded in the year work is started.

Appendix E: Additional Aircraft Mission Capability Rates

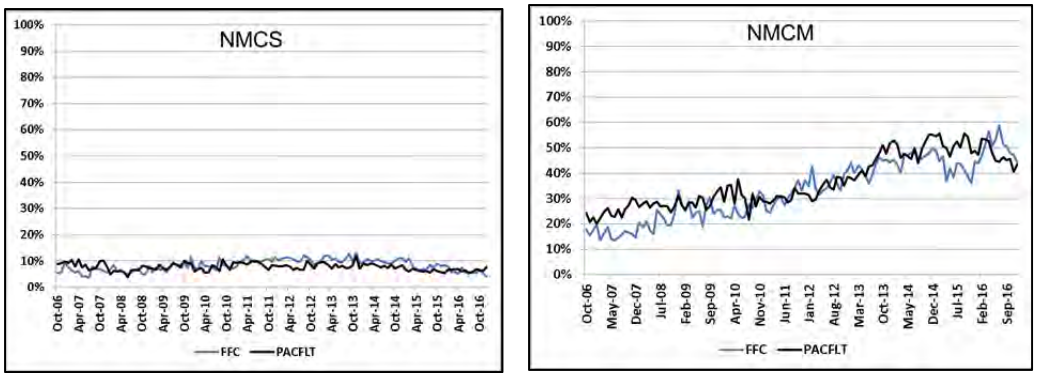
In this appendix, we include additional graphics regarding mission capability rates for the F/A-18E and MH-60S aircraft, by month and Fleet.

Figure 58. F/A-18F FMC and MC rates, by month and Fleet



Source: SCIR-3 Report.

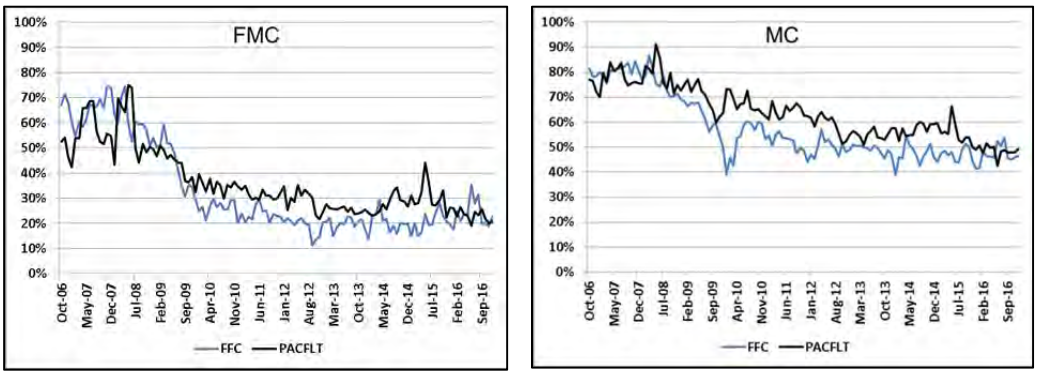
Figure 59. F/A-18F NMCS and NMCM rates, by month and Fleet



Source: SCIR-3 Report.

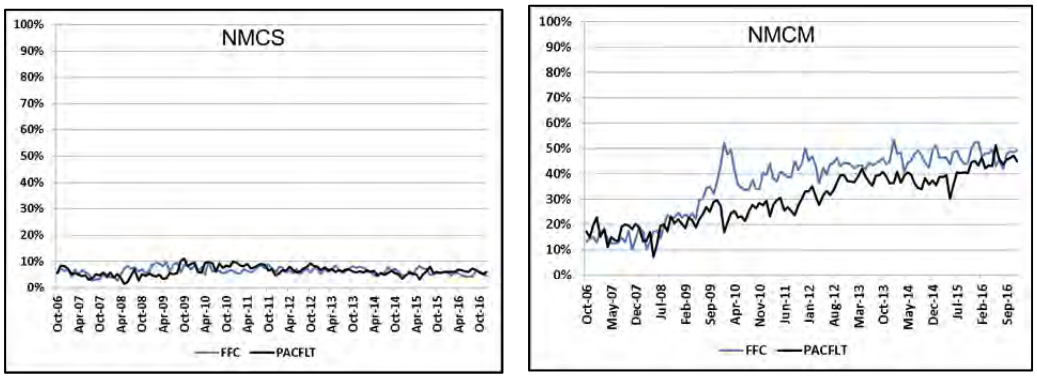
Similar rates for the MH-60S helicopter are shown in Figure 60 (FMC and MC) and Figure 61 (NMCS and NMCM). These rates, as with the F/A-18 aircraft in the previous comparisons, are very closely aligned.

Figure 60. MH-60S FMC and MC rates, by month and Fleet



Source: SCIR-3 Report.

Figure 61. MH-60S NMCS and NMCM rates, by month and Fleet



Source: SCIR-3 Report.

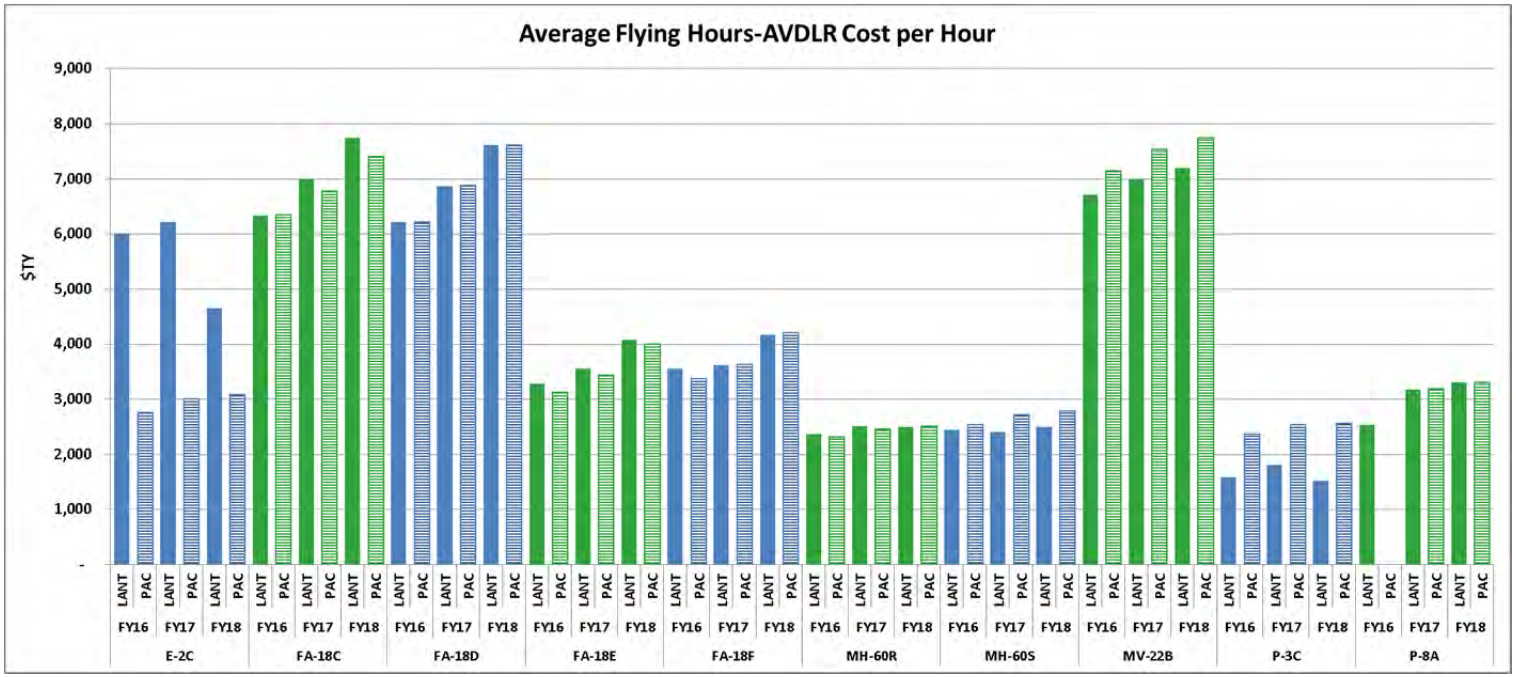
Appendix F: Cost per Flying Hour Comparisons, by Special Interest Code

Figures 62 to 65 compare CPFH rates for the major Fleet T/M/S, with each figure representing one of the main SI codes within SAG 1A1A. Data from the OP-20 Report from OPNAV N83 was used to construct these figures.

In each figure, the color of the bars alternates between blue and green to visually differentiate the individual T/M/S, with data for FY 2016, FY 2017, and FY 2018 shown for each T/M/S, in each SI. In addition, bars for FFC are solid in color, while those for PACFLT are striped. In this way, it is easier to identify differences in rates between the Fleets, by SI.

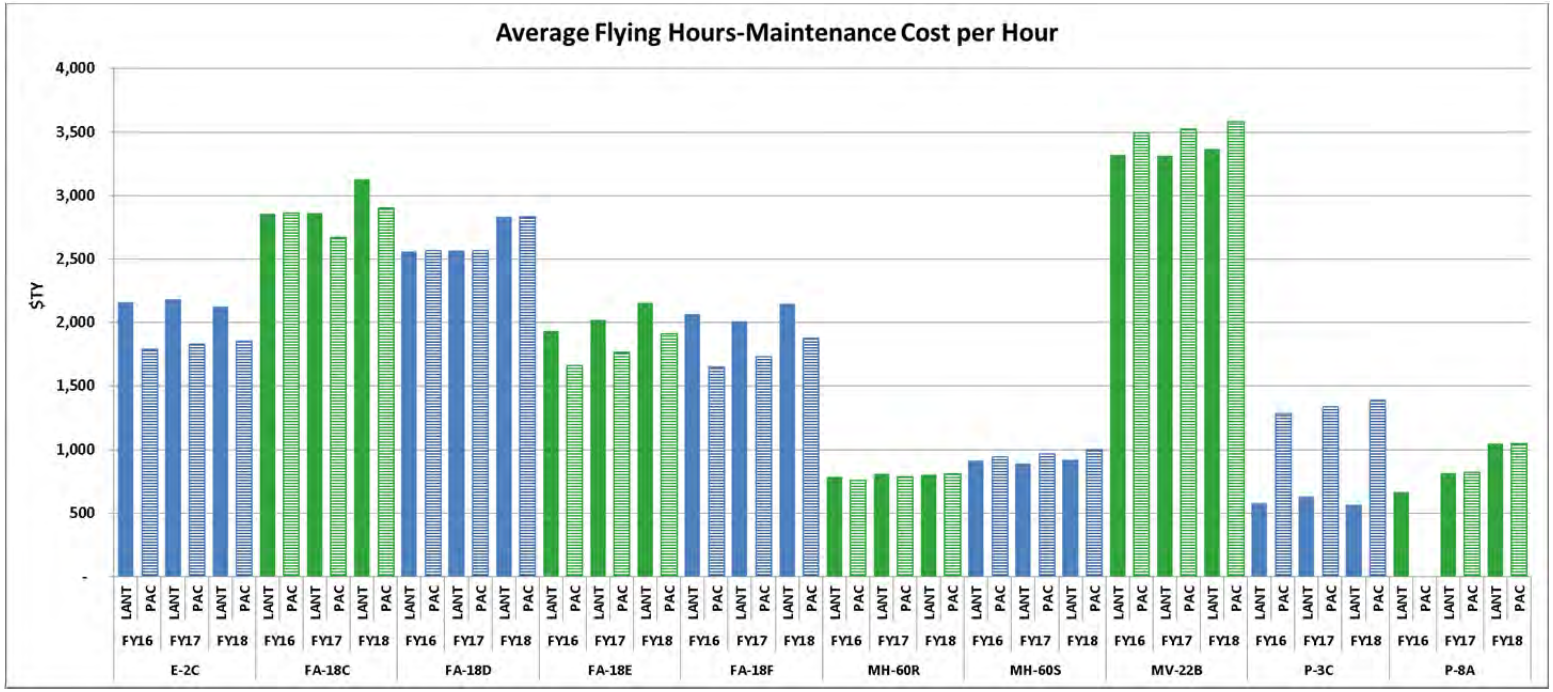
The largest differences between FFC and PACFLT appear in the rates for the SI codes for Flying Hours-Maintenance (FM) and Flying Hours-Contract Maintenance (FW).

Figure 62. Comparison of FA cost per hour, by T/M/S and FY



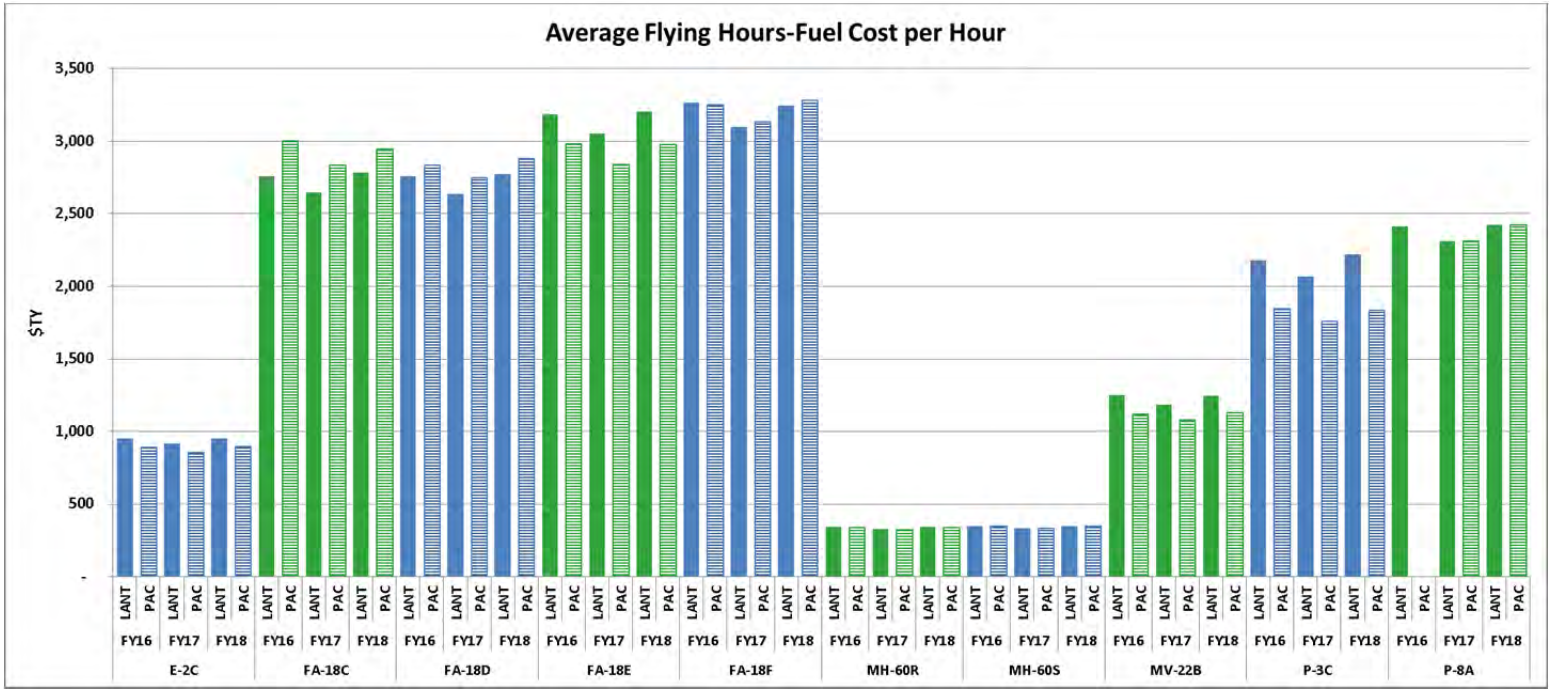
Source: OP-20 Flying Hour Program file.

Figure 63. Comparison of FM cost per hour, by T/M/S and FY



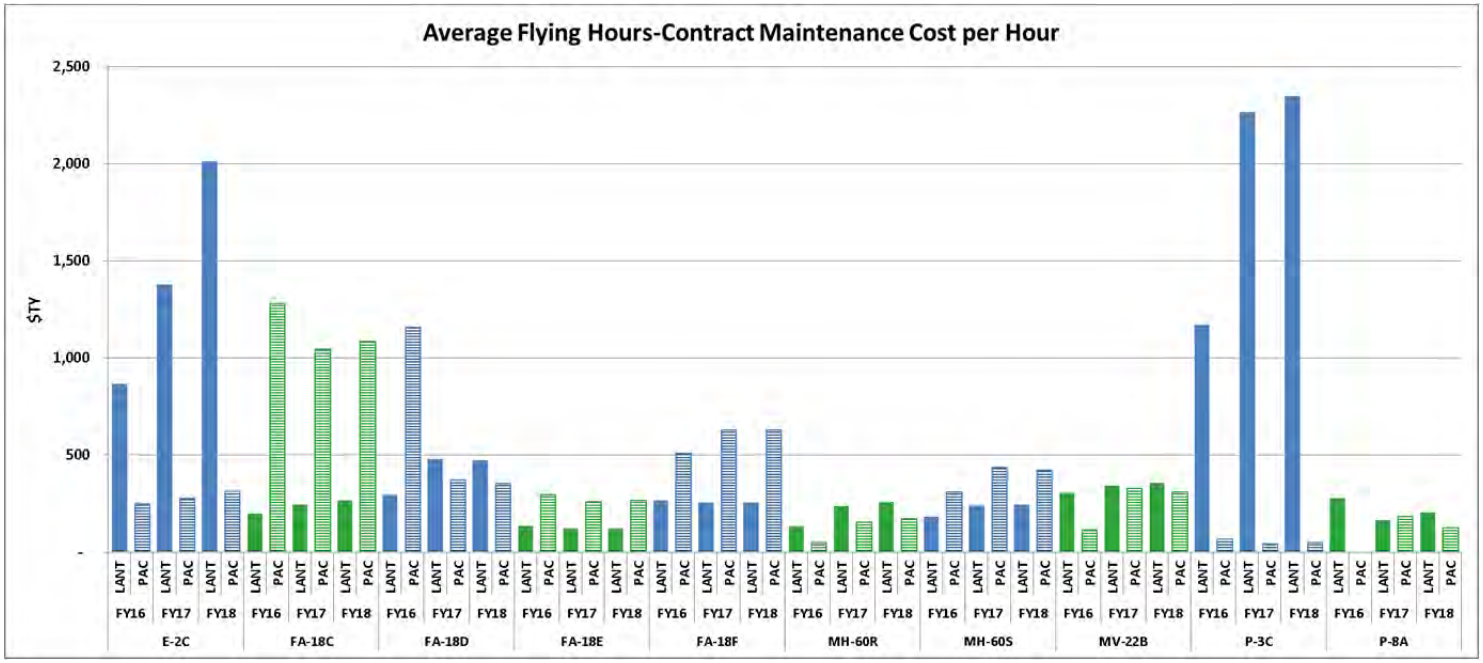
Source: OP-20 Flying Hour Program file.

Figure 64. Comparison of FF cost per hour, by T/M/S and FY



Source: OP-20 Flying Hour Program file.

Figure 65. Comparison of FW cost per hour, by T/M/S and FY



Source: OP-20 Flying Hour Program file.

Appendix G: OPNAV N83 PB16, PB17, and PB18 "Chicklet Charts"

PB-16 with OCO									
Program		FY16			FY17	FY18	FY19	FY20	FYDP
		Baseline	OCO	Total	Baseline	Baseline	Baseline	Baseline	Baseline
FRP Ao	CSG FRP Ao*	2.5+0.4+0.7		2.5+0.4+0.7	2.6+0.3+0.8	2.2+0.2+0.7	2.3+0.4+0.7	2.6+0.3+0.8	
	ARG FRP Ao	2.2+0.7+2.3		2.2+0.7+2.3	2.5+0.8+3.1	3.3+1.4+1.0	1.9+0.6+1.8	2.3+0.9+2.4	
Ship Ops	58/24@100% OPTAR)	3,204	324	3,528	3,344	3,489	3,612	3,735	17,384
	Baseline Rqmt ($M) (BL 51/24@100%)	3,139	65	3,204	3,298	3,443	3,555	3,649	17,084
	Funding ($M)	2,436	703	3,139	2,934	3,016	3,158	3,216	14,760
	Total OCO		1,092						
	Delta to Baseline Rqmt ($M)	(703)		(65)	(364)	(427)	(397)	(433)	(2,324)
	OPTEMPO (Funded)	**45/20**		**58/24**	**51/24**	**51/24**	**51/24**	**51/24**	
	OCO Needed to Get to Baseline Rqmt ($M)								
	OCO Needed to Get to N43 Assd Rqmt ($M)								
	CVN FRP Ao**	2.5+1.2+0.7		2.5+1.2+0.7	2.6+2.4+0.8	2.2+2.5+0.7	2.3+1.6+0.7	2.6+1.4+0.8	
	SC FRP Ao	28.2+15.3+9.4		28.2+15.3+9.4	27.1+14.0+15.8	30.0+19.2+13.6	28.6+17.5+13.8	30.0+15.2+12.9	
	SSN FRP Ao	12.0+11.4+11.0		12.0+11.4+11.0	11.9+12.3+6.8	8.9+14.7+9.3	10.1+14.2+8.8	9.0+14.3+11.5	
	Non deployed Steaming Days Funded	7,920		9,648	10,412	10,432	11,204	11,852	
	Steaming Days Funded	14,616		19,184	16,580	17,072	17,440	17,040	
	BL SR/SO/SX % Funded	**59%**		**100%**	**77%**	**74%**	**77%**	**75%**	
FHP	Rqmt ($M)	7,676	463	8,139	7,875	8,087	8,250	8,555	40,443
	Funding ($M)	7,238	358	7,596	7,486	7,694	8,049	8,150	38,618
	Delta ($M)	(438)		(543)	(389)	(393)	(201)	(405)	(1,825)
	FRP Ao	**3.1+0.4+1.4**		**3.1+0.4+1.4**	**3.2+0.3+1.5**	**2.8+0.2+1.2**	**2.8+0.4+1.5**	**3.0+0.3+1.6**	
	USN/USMC T-Rating	**2.84/2.44**		**2.84/2.44**	**2.81/2.47**	**2.83/2.35**	**2.73/2.20**	**2.79/2.33**	
	Percent Funded	**94%**		**93%**	**95%**	**95%**	**98%**	**95%**	
ADM	Rqmt ($M)	1,279	17	1,296	1,338	1,334	1,363	1,369	6,683
	Funding ($M)	980	96	1,076	1,013	1,037	1,054	1,064	5,147
	Delta ($M)	(299)		(220)	(325)	(297)	(309)	(305)	(1,536)
	Percent Funded	**77%**		**83%**	**76%**	**78%**	**77%**	**78%**	
	AF Backlog	**168**	**91**		**199**	**191**	**186**	**203**	947
	Engine Backlog	**539**	**539**		**522**	**610**	**438**	**493**	2602
Ship Maint	Rqmt ($M)	7,279	640	7,919	7,392	8,108	7,584	7,216	37,579
	Funding ($M)	5,961	1,923	7,884	5,940	5,871	6,032	6,025	29,830
	Delta ($M)	(1,318)		(35)	(1,452)	(2,237)	(1,552)	(1,191)	(7,749)
	Percent Funded	**80%**		**100%**	**80%**	**72%**	**80%**	**83%**	**80%**
NECE	Rqmt ($M)	734	51	785	750	762	783	799	3,828
	Funding ($M)	585	163	748	313	315	324	330	1,867
	Delta ($)	(149)		(37)	(437)	(447)	(459)	(469)	(1,961)
	Percent Funded	**80%**		**95%**	**42%**	**41%**	**41%**	**41%**	**49%**
	EOD Plt Ao (Goal 22.5+18+7.5)	**17.9+17.2+11.9**		**18.7+25.2+10.1**	**0+0+0**	**0+0+0**	**0+0+0**	**0+0+0**	
	NCF Bn Ao (Goal 2+1.3+1.8)	**1.4+0.8+0.8**		**2+1+1.1**	**0+0+0**	**0+0+0**	**0+0+0**	**0+0+0**	
	CRF Sqd Ao (Goal 1.1+1.1+0.2)	**0.6+0.4+0.4**		**1.1+0.4+0.6**	**0+0+0**	**0+0+0**	**0+0+0**	**0+0+0**	
	ELSG Bn (Goal 0.3+0.5+0.1)	**0.2+0.4+0.04**		**0.3+0.5+0.06**	**0+0+0**	**0+0+0**	**0+0+0**	**0+0+0**	
	MDSU Co Ao (Goal 3+5+1)	**1.9+2.2+0.9**		**2.5+3.4+1.2**	**0+0+0**	**0+0+0**	**0+0+0**	**0+0+0**	

TY$M		FY16 ($M)			FY17 ($M)	FY18 ($M)	FY19 ($M)	FY20 ($M)	FYDP ($M)
		BASELINE	OCO	TOTAL					FY16-20
FRP Ao	CSG FRP Ao*	2.5+0.4+0.7		2.5+0.4+0.7	2.6+0.3+0.8	2.2+0.2+0.7	2.3+0.4+0.7	2.6+0.3+0.8	
	ARG FRP Ao	2.2+0.7+2.3		2.2+0.7+2.3	2.5+0.8+3.1	3.3+1.4+1.0	1.9+0.6+1.8	2.3+0.9+2.4	
Ship Ops Guidance: steaming days 51/24 & 80% OPTAR	N43 Assd Rqmt (BL 58/24@100% OPTAR)	3,204	324	3,528	3,344	3,489	3,612	3,735	17,384
	Baseline Rqmt ($M) (BL 51/24@100%)	3,139	65	3,204	3,298	3,443	3,555	3,649	17,084
	Funding	2,436	703	3,139	2,934	3,016	3,158	3,216	14,760
	Total OCO		1,092						
	Delta to Assd Rqmt	(703)		(65)	(364)	(427)	(397)	(433)	(2,324)
	CVN FRP Ao **	2.5+1.2+0.7		2.5+1.2+0.7	2.6+2.4+0.8	2.2+2.5+0.7	2.3+1.6+0.7	2.6+1.4+0.8	
	Steaming Days	45/20		58/24	51/24	51/24	51/24	51/24	
	OPTAR	59%		100%	77%	74%	77%	75%	
FHP	Rqmt	7,676	463	8,139	7,875	8,087	8,250	8,555	40,443
	Funding	7,238	358	7,596	7,486	7,694	8,049	8,150	38,618
	Delta	(438)		(543)	(389)	(393)	(201)	(405)	(1,825)
	FRP Ao	3.1+0.4+1.4		3.1+0.4+1.4	3.2+0.3+1.5	2.8+0.2+1.2	2.8+0.4+1.5	3.0+0.3+1.6	
	USN/USMC T-Rating	2.84/2.44		2.84/2.44	2.81/2.47	2.83/2.35	2.73/2.20	2.79/2.33	
	USN/USMC T-Rating	94%		93%	95%	95%	98%	95%	
ADM	Rqmt	1,279	17	1,296	1,338	1,334	1,363	1,369	6,683
	Funding	980	96	1,076	1,013	1,037	1,054	1,064	5,147
	Delta	(299)		(220)	(325)	(297)	(309)	(305)	(1,536)
	Percent Funded	77%		83%	76%	78%	77%	78%	
	AF Backlog	168	91		199	191	186	203	947
	Engine Backlog	539	539		522	610	438	493	2602
Ship Maint Guidance: fund to 80% of RQMT	Rqmt	7,279	640	7,919	7,392	8,108	7,584	7,216	37,579
	Funding	5,961	1,923	7,884	5,940	5,871	6,032	6,025	29,830
	Delta	(1,318)		(35)	(1,452)	(2,237)	(1,552)	(1,191)	(7,749)
	Percent Funded	80%		100%	80%	72%	80%	83%	80%
NECE	Rqmt	734	51	785	750	762	783	799	3,828
	Funding	585	163	748	313	315	324	330	1,867
	Delta	(149)		(37)	(437)	(447)	(459)	(469)	(1,961)
	Percent Funded	80%		95%	42%	41%	41%	41%	49%

* The CSG FRP Ao now considers CVW (FHP Ao) in addition to CVN and SC schedules. Accordingly, X+Y+Z values are determined by the lesser of programmed schedules between CVN, CVW and SC.
** To align the CSG's CVN and Surface Combatants (SC)s Ao, the CVN Ao was tabulated using 30- and 90- surge rules as used by SCs. Therefore, 30-day Surge ("Y") is Sustain Phase only and 90-day Surge ("Z") is Integrated Phase only.

PB-17 Last Updated: 20160210											
Program		FY17					FY18	FY19	FY20	FY21	FYDP
		Baseline	OCO for:			Total	Baseline	Baseline	Baseline	Baseline	Baseline
			Base[#]	OCO	Reset						
FRP A_O	CSG FRP A_O*					2.7+0.9+1.3	1.9+0.4+1.6	2.6+0.8+1.5	2.1+0.6+1.4	2.5+0.8+2.1	
	ARG FRP A_O					3.0+0.5+4.1	2.8+1.9+2.7	2.5+0.9+3.6	2.0+0.9+3.8	3.0+0.8+5.3	
Ship Ops	58/24@100% OPTAR)	3,016				2,855	3,113	3,327	3,386	3,624	16,466
	Baseline Rqmt ($M) (BL 51/24@100%)	2,992				2,855	3,084	3,285	3,340	3,556	16,257
	Guidance Rqmt ($M) (BL 45/20@ 80%)	2,602	984			2,855	2,685	2,861	2,907	3,101	14,156
	Funding ($M)	1,871					2,137	2,296	2,348	2,490	11,143
	Total OCO		984								
	Delta to Full Rqmt ($M)	(1,145)					(976)	(1,031)	(1,037)	(1,133)	(5,322)
	Delta to Baseline ($M)	(1,121)					(946)	(989)	(992)	(1,065)	(5,113)
	Delta to Guidance ($M)	(731)					(547)	(565)	(559)	(611)	(3,013)
	OPTEMPO (Funded)	**45/20**				**58/24**	**45/20**	**45/20**	**45/20**	**45/20**	
	CVN FRP A_O					2.7+1.9+3.1	1.9+2.1+2.9	2.6+1.9+2.2	2.1+1.7+2.3	2.5+2.4+2.8	
	CRUDES FRP A_O					25.0+11.1+30.7	22.4+13.8+30.8	27.0+20.5+22.1	25.6+12.0+27.7	26.0+15.3+29.3	
	SSN FRP A_O					11.3+14.5+12.9	9.4+15.5+14.2	11.1+17.3+11.4	9.4+17.3+14.0	9.9+14.7+17.1	
	Non-deployed Steaming Days Funded	8,663				9,992	9,396	9,306	9,707	10,490	
	Steaming Days Funded	14,103				17,474	13,308	15,038	14,193	14,105	
	BL SR/SO/SX % Funded	**39%**				**90%**	**50%**	**51%**	**52%**	**51%**	
FHP	Executable Rqmt ($M) (9 CVW, FCS)	7,375	*500*	298	67	7,740	7,487	7,809	7,998	8,474	39,142
	Funding ($M)	6,343	500	294	67	7,204	6,996	7,164	7,472	7,766	35,742
	Delta ($M)	(1,032)				(536)	(491)	(645)	(525)	(707)	(3,400)
	FRP A_O					3.0 +0.9+1.3	2.2+0.4+1.6	2.8+0.8+1.5	2.6+0.6+1.4	2.8+0.8+2.1	
	USN/USMC T-Rating (Goal 2.5/2.0)	**2.75/2.54**				**2.75/2.54**	**2.88/2.5**	**2.77/2.59**	**2.84/2.52**	**2.73/2.66**	
	Percent Funded	**86%**				**93%**	**93%**	**92%**	**93%**	**92%**	
ADM	Rqmt ($M)	1,440	*288*		0	1,440	1,427	1,578	1,645	1,730	7,820
	Funding ($M)	1,094	111		19	1,225	1,082	1,188	1,240	1,307	5,911
	Delta ($M)	(346)				(216)	(345)	(390)	(405)	(423)	(1,910)
	Percent Funded	**76%**				**85%**	**76%**	**75%**	**75%**	**76%**	**76%**
	AF Backlog	**278**				**117**	**233**	**247**	**271**	**265**	**1,133**
	Engine Backlog	**458**				**458**	**437**	**404**	**485**	**448**	**2,232**
Ship Maint	Rqmt ($M)	7,434	*2267*		625	8,059	7,944	7,893	8,103	8,091	39,465
	Funding ($M)	5,167	2278		625	8,070	6,243	6,124	6,226	6,115	29,874
	Delta ($M)	(2,267)				11	(1,701)	(1,769)	(1,877)	(1,976)	(9,591)
	Percent Funded	**70%**				**100%**	**79%**	**78%**	**77%**	**76%**	**76%**
NECE	Rqmt ($M)	744	*157*	38		782	769	783	806	825	3,927
	Funding ($M)	587	127	38		752	475	484	493	503	2,541
	Delta ($)	(157)				(30)	(294)	(299)	(313)	(322)	(1,386)
	Percent Funded	**79%**				**96%**	**62%**	**62%**	**61%**	**61%**	**65%**
	EOD Plt A_O (Goal 22.5+18+7.5)	**18.8+16.9+9.7**				**19.1+28.5+9.4**	**13.4+10.1+6.5**	**12.4+11.0+6.3**	**13.5+10.1+6.7**	**11.9+10.8+6.1**	
	NCF Bn A_O (Goal 2+1.3+1.8)	**1.2+0.6+0.5**				**2+1.5+0.9**	**0+0+0**	**0+0+0**	**0+0+0**	**0+0+0**	
	CRF Sqd A_O (Goal 1.1+1.1+0.2)	**0.7+0.3+0.3**				**1.1+0.5+0.5**	**0.4+0.2+0.1**	**0.4+0.1+0.1**	**0.3+0.1+0.2**	**0.3+0.2+0.1**	
	ELSG Bn (Goal 0.3+0.5+0.1)	**0.3+0+0.2**				**0.3+0.5+0.1**	**0.1+0+0.1**	**0.1+0+0.1**	**0.1+0+0.1**	**0.1+0+0.1**	
	MDSU Co A_O (Goal 3+5+1)	**2.2+1.8+0.8**				**3+2.7+1.3**	**1.0+0.8+0.4**	**1.0+0.8+0.4**	**1.0+0.8+0.4**	**0.9+0.7+0.3**	
Aviation Support	Rqmt ($M)	1,060			142	1,202	1,068	1,089	1,106	1,126	5,449
	Funding ($M)	706			177	883	693	694	700	711	3,503
	Delta ($M)	(354)				(319)	(376)	(395)	(407)	(415)	(1,946)
	Percent Funded	**67%**				**73%**	**65%**	**64%**	**63%**	**63%**	**64%**
Ship Support	Rqmt ($M) (Includes Barges)	748				748	756	777	801	847	3,928
	Funding ($M)	572				572	567	571	580	626	2,917
	Delta ($M)	(175)				(175)	(189)	(206)	(221)	(221)	(1,011)
	Percent Funded	**77%**				**77%**	**75%**	**73%**	**72%**	**74%**	**74%**

PB-17 Last Updated: 20160210											
Program		FY17					FY18	FY19	FY20	FY21	FYDP
		Baseline	OCO for:			Total	Baseline	Baseline	Baseline	Baseline	Baseline
			Base#	OCO	Reset						
Aviation Logistics (1A9A)	Rqmt ($M)	716			36	752	829	937	1,057	1,205	4,744
	Funding ($M)	575			38	613	514	538	526	631	2,783
	Delta ($M)	(141)				(139)	(315)	(399)	(531)	(574)	(1,961)
	Percent Funded	**80%**				**81%**	**62%**	**57%**	**50%**	**52%**	**59%**
	DoN JSF % Funded	74%				74%	49%	48%	38%	44%	56%
	MV-22B % Funded	88%				88%	81%	73%	71%	69%	76%
	KC-130J % Funded	95%				95%	92%	74%	78%	77%	83%
	E-6B % Funded	93%				93%	94%	92%	95%	95%	94%
Ranges	Rqmt ($M)	291		23		314	313	354	341	335	1,635
	Funding ($M)	246		12		258	252	272	259	272	1,302
	Delta ($M)	(45)				(56)	(61)	(82)	(81)	(63)	(333)
	Percent Funded	**84%**				**82%**	**81%**	**77%**	**76%**	**81%**	**80%**
Fleet Training	Rqmt ($M)	177		14		191	179	178	183	186	902
	Funding ($M)	139		4		143	140	142	144	147	712
	Delta ($M)	(38)				(48)	(38)	(36)	(38)	(39)	(190)
	Percent Funded	**78%**				**75%**	**78%**	**80%**	**79%**	**79%**	**79%**
Targets	Rqmt ($M)	276		6		282	248	253	259	265	1,302
	Funding ($M)	240		6		246	204	207	212	217	1,080
	Delta ($M)	(36)				(36)	(44)	(45)	(47)	(49)	(221)
	Percent Funded	**87%**				**87%**	**82%**	**82%**	**82%**	**82%**	**83%**
Big 5 Total	Rqmt ($M)	20,173	*4,196*	336	692	21,038	20,924	21,529	22,075	22,862	107,563
	Funding ($M)	15,063	4,000	332	711	20,106	16,933	17,255	17,780	18,181	85,211
	Delta ($M)	(5,111)				(932)	(3,991)	(4,274)	(4,295)	(4,681)	(22,352)
GRAND Total	Rqmt ($M)	23,278	*3,696*	379	870	24,527	24,133	24,978	25,684	26,707	124,780
	Funding ($M)	17,541	4,000	355	926	22,821	19,303	19,678	20,201	20,786	97,508
	Delta ($M)	(5,737)				(1,705)	(4,830)	(5,299)	(5,483)	(5,922)	(27,271)
# "OCO for Base" figures that are italicized are already included in the 100% Baseline Requirement figure, and therefore are not additionally added to the total requirement column.											

Source: OPNAV N83.

N83 Chicklet: PB18 Rqmt compared against PB18 funding

Last Updated: 05/02/2017

		FY18					FY19	FY20	FY21	FY22	FYDP
		Baseline	OCO for: Base	OCO	Reset	Total	Baseline	Baseline	Baseline	Baseline	Baseline
FRP A_O	CSG FRP A_O*					1.8+2.2+1.5	2.0+1.1+1.5	1.9+0.6+1.1	2.0+0.6+2.3	3.0+2.0+1.6	
	ARG FRP A_O					2.6+1.6+2.7	3.3+0.7+3.1	2.2+1.0+3.2	2.7+1.2+4.4	2.8+1.4+3.6	
Ship Operations	Full Rqmt ($M) (BL 58/24@100% OPTAR)	3,188		*60*		3,188	3,379	3,445.5	3,665	3,774	17,450
	Baseline Rqmt ($M) (BL 51/24@100%)	3,128	*704*			3,128	3,324	3,399	3,598	3,692	17,141
	Guidance Rqmt ($M) (BL 45/20@ 45%) (45/20, 65% FY18 only)	2,424				2,424	2,205	2,235	2,480	2,431	11,774
	Funding ($M) (45/20 @ 45%) (45/20, 65% FY18 only)	2,424	704	60.0		3,188	2,205	2,235	2,480	2,431	11,774
	Delta to Full Rqmt ($M)	(764)				0	(1,174)	(1,211)	(1,185)	(1,343)	(5,676)
	Delta to Baseline Rqmt ($M)	(704)				60	(1,119)	(1,164)	(1,118)	(1,261)	(5,366)
	Delta to Guidance ($M)	0				764	0	0	0	0	0
	OPTEMPO (Funded)	45/20				58/24	45/20	45/20	45/20	45/20	
	CVN FRP AO	1.8+2.2+3.2				1.8+2.2+3.2	2.0+1.8+3.4	1.9+1.4+2.8	2.0+1.5+4.2	3.0+2.0+2.6	
	CRUDES FRP AO	22.7+15.3+31.8				22.7+15.3+31.8	25.7+14.2+30.4	22.2+13.0+38.4	24.7+15.0+38.0	26.9+21.2+27.9	
	SSN FRP AO	8.7+16.6+12.1				8.7+16.6+12.1	9.8+16.6+13.2	10.9+17.9+13.6	8.6+18.9+14.7	13.5+19.6+11.2	
	Non-deployed Steaming Days Funded	9,143				11,259	9,138	10,260	11,054	10,636	
	Deployed (COCOM) Steaming Days Funded	13,574				16,186	14,684	13,742	13,279	14,586	
	BL SR/SO/SX % Funded (OPTAR)	65%				100%	45%	45%	50%	45%	73%
Ship Maintenance	Rqmt ($M)	9,689	*1,938*			9,689	9,881	10,126	9,712	10,497	49,903
	Funding ($M)	7,166	1,858		625	9,649	7,193	7,733	7,542	8,012	37,646
	Delta ($M)	(2,523)				(40)	(2,687)	(2,393)	(2,170)	(2,484.4)	(12,257)
	Percent Funded	74%				100%	73%	76%	78%	76%	75%
Ship Support	Rqmt ($M) (Includes Barges)	786				786	751	766	771	820	3,894
	Funding ($M)	780				780	748	747	821	809	3,905
	Delta ($M)	(6)				(6)	(3)	(19)	50	(11)	11
	Percent Funded	99%				99%	100%	97%	107%	99%	100%
Navy Expeditionary Combat Enterprise (NECE)	Rqmt ($M)	852	128	54		906	868	890	911	928	4,448
	Funding ($M)	717	123	54		893	482	494	507	646	2,845
	Delta ($)	(135)				(13)	(386)	(396)	(404)	(282)	(1,604)
	Percent Funded	84%				99%	55%	56%	56%	70%	64%
	EOD Plt A_O (Goal 22.8+31.8+4.4)	18.3+23.2+9.2				22.8+31.8+4.4	4.5+5.6+2.1	4.4+5.6+2.3	4.7+5.5+2.0	11.8+14.5+5.8	
	NCF Bn A_O (Goal 2+2+0.7)	0.9+0.5+0.5				2.0+2.0+0.7	0+0+0	0+0+0	0+0+0	0+0+0	
	CRF Sqd A_O (Goal 1.1+1.1+0.2)	0.8+0.6+0.2				1.1+1.1+0.2	0+0+0	0+0+0	0+0+0	0.4+0.3+0.1	
	ELSG Bn (Goal 0.3+0.5+0.1)	0.3+0.1+0.2				0.3+0.5+0.1	0.2+0+0.1	0.2+0+0.1	0.2+0+0.1	0.3+0+0.2	
	MDSU Co A_O (Goal 3+5+1)	3.0+2.1+1.9				3.0+5.0+1.0	1.5+1.0+1.0	1.6+1.0+1.0	1.5+1.0+1.0	2.4+1.5+1.5	
Maritime Total	Rqmt ($M)	13,663	2,642	60	0	13,663	14,011	14,337	14,148	15,091	71,249
	Funding ($M)	10,370	2,562	60	625	13,617	10,146	10,715	10,843	**11,252**	53,326
	Delta ($M)	(3,293)				(46)	(3,864)	(3,622)	(3,304)	**(3,839)**	(17,923)
	Percent Funded	**76%**				**100%**	**72%**	**75%**	**77%**	**75%**	
Big 5 Total (SO, SDM, FHP, ADM , NECC)	Rqmt ($M)	23,399	2,985	403	0	23,742	24,156	24,782	24,897	26,030	123,263
	Funding ($M)	19,706	2,901	472	691	23,769	18,609	19,589	20,280	21,286	99,468
	Delta ($M)	(3,694)				27	(5,548)	(5,192)	(4,617)	(4,745)	(23,795)
GRAND Total	Rqmt ($M)	26,240	3,250	472	66	26,582	27,095	27,905	28,214	29,591	139,045
	Funding ($M)	22,096	3,165	472	853	26,424	21,144	22,220	23,170	24,279	112,909
	Delta ($M)	(4,144)				(158)	(5,951)	(5,685)	(5,044)	(5,312)	(26,136)

Notes:
Purple italicized figures are included in stated requirements and are not additions; therefore, they are not summed in the "total" column.
* The CSG FRP AO considers CVW (FHP AO) in addition to CVN and SC schedules. Accordingly, X+Y+Z values are determined by the lesser of programmed schedules between CVN, CVW and SC.
Ship Maintenance: 1- OCO for Reset is non-additive in relation to the total requirement figure due to baseline requirement development improvements and FY18 OCO limitations/funding strategies.
2- N80/FMB roughly made their FY18 Base and OCO for Base distribution calculations by reducing the baseline requirement by the OCO for Reset amount (i.e. $9689M - $625M = $9064; then $9064 ~80/20). N83 represents the requirements as we assessed them, therefore funding percentages do not match overall Navy narrative.

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